

STENY H. HOYER
5TH DISTRICT, MARYLAND

CHAIRMAN
DEMOCRATIC CAUCUS

CO-CHAIR
COMMISSION ON SECURITY AND
COOPERATION IN EUROPE

DEMOCRATIC STEERING
AND POLICY COMMITTEE

APPROPRIATIONS COMMITTEE

TREASURY, POSTAL SERVICE,
GENERAL GOVERNMENT

LABOR,
HEALTH AND HUMAN SERVICES,
EDUCATION

DISTRICT OF COLUMBIA

Congress of the United States
House of Representatives
Washington, DC 20515-2005

April 24, 1992

Dr. R.D. Plowman
Administrator
Agricultural Research Service
Administration Building
Washington, D.C. 20250

Dear Dr. Plowman,

In 1985, when we met for the first time, you, Dr. Klassen and I agreed that Beltsville was in desperate need of renovation. Without immediate action, pressures would continue to disperse Beltsville's activities across the country and sell off this critically important greenspace.

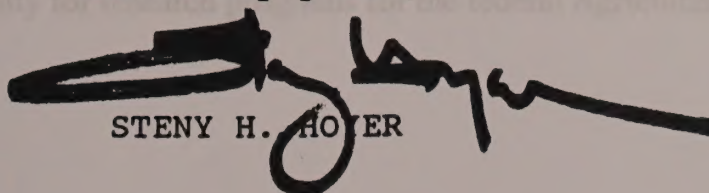
Since then our team approach has been extremely successful. Together with your efforts within the Administration and that of Senator Sarbanes, Senator Mikulski and myself on the Hill, we have been able to secure over \$75 million towards the renovation of the Beltsville campus. As you and Dr. Finney are aware much of the work has been unglamorous, in that the public does not see steam lines, water pipes and electrical upgrades. But it is a vital investment in the future of Beltsville none-the-less.

I sincerely regret that a previously scheduled engagement will prevent me from joining with you today to celebrate a much more visible milestone in the Beltsville modernization. It truly is a day for all of the employees at Beltsville to take pride in this project, because in truth, it is their accomplishments, commitment and dedication that are the driving force behind the modernization effort.

We have come a long way since 1985, with the first appropriation of \$4.26 million towards this project. And we have a long way to go before we finally complete this effort. I pledge that I will continue to work with you and our Senators to provide quality, state of the art facilities for Beltsville and I look forward to dedicating more buildings with you as this project continues to move ahead.

Warmest wishes to you and all my friends at BARC.

Sincerely yours,



STENY H. HOYER



FOR IMMEDIATE RELEASE

December 16, 2015

CONTACT:

Matt Jorgenson

Alanna Wellspeak

202-228-1122

MIKULSKI ANNOUNCES FY16 SPENDING BILL INCLUDES \$37.1 MILLION IN FEDERAL FUNDING TO MODERNIZE RESEARCH LABORATORIES AT BELTSVILLE AGRICULTURAL RESEARCH CENTER AND SUPPORT JOBS IN PRINCE GEORGE'S COUNTY

Senator fought to include federal funding at agricultural facility that supports more than 1,500 Maryland jobs in Prince George's County

WASHINGTON – U.S. Senator Barbara A. Mikulski (D-Md.), Vice Chairwoman of the Senate Appropriations Committee, today announced the *Consolidated Appropriations Act of 2016* includes \$37.1 million in federal funding to modernize research laboratories at the Beltsville Agricultural Research Center (BARC) in Prince George's County. This funding supports the jobs of more than 1,500 Marylanders, including scientists who are conducting cutting-edge research to solve agricultural problems relating to farming, food safety, nutrition and health.

The legislation is currently under consideration in the House of Representatives. The Senate is expected to take it up later this week.

"This bill is a jobs bill, supporting thousands of Maryland jobs," **Senator Mikulski** said.

"Maryland's number one industry is agriculture. BARC is the NIH of agriculture science and discovery, where scientists are conducting cutting-edge research to develop solutions in food safety, nutrition and farming. Together with our farmers and small businesses, those who work on Maryland's farms and in our federal labs, universities and other research facilities are supporting our economic future and keeping our nation healthy and safe. This funding will help ensure BARC has modern, up-to-date facilities to carry out its important mission."

BARC, located in Prince George's County, is one of the largest agricultural research locations in the world. It is the flagship facility for research programs for the federal Agricultural Research

Service (ARS). Researchers at BARC work in every facet of agriculture from lab to farm to family tables.

Many ARS laboratories were built in the 1950s and 1960s and are now more than 50 years old. This federal funding will be used to modernize Building 307, which has been vacated and its space is no longer functional for ARS' research activities. Its basement currently serves as the IT hub for the agency's scientists and other federal tenants located on BARC's East Campus. By renovating and modernizing this research facility, BARC will consolidate facilities used for animal science, human nutrition and honey bee research that is currently dispersed and housed in small, inefficient and outdated buildings.

#

From: James Anderson <farbbusiness@yahoo.com>
Subject: Fw: www_email
Date: April 22, 2014 10:54:50 AM EDT
To: Jim Anderson <janderso1@mac.com>
Reply-To: James Anderson <farbbusiness@yahoo.com>



On Monday, April 21, 2014 7:55 PM, James Anderson <farbbusiness@yahoo.com> wrote:

FYI

On Monday, April 21, 2014 3:54 PM, "senator@mikulski.senate.gov" <senator@mikulski.senate.gov> wrote:

Dear Dr. Anderson:

Thank you for forwarding me a copy of your letter to Chairman Pryor of the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Subcommittee regarding your Fiscal Year 2015 priorities.

This is obviously a matter of great concern to you and I wanted to let you know that I appreciate your efforts to keep me informed of your views and actions regarding this matter.

Again, thanks for keeping in touch with me. Please let me know if I may be of assistance to you in the future.

Sincerely,
Barbara A. Mikulski
United States Senator

Please do not respond directly to this e-mail. The originating e-mail account is not monitored.

If you would like to get in touch with me again, please visit the comments page of my website [here](#).

If you would like to get regular updates, please sign up for my E-Newsletter [here](#). Please follow me on [Twitter](#) and [Facebook](#).

—

SENATOR JAMIE RASKIN
20th Legislative District
Montgomery County

Judicial Proceedings Committee

Joint Committee on the Chesapeake and
Atlantic Coastal Bays Critical Area

Joint Committee on Federal Relations

Joint Committee on Legislative Ethics



The Senate of Maryland
ANNAPOLIS, MARYLAND 21401

Annapolis Office
James Senate Office Building
11 Bladen Street, Room 122
Annapolis, Maryland 21401
301-858-3634 • 410-841-3634
800-492-7122 Ext. 3634
Jamie.Raskin@senate.state.md.us

January 25, 2011

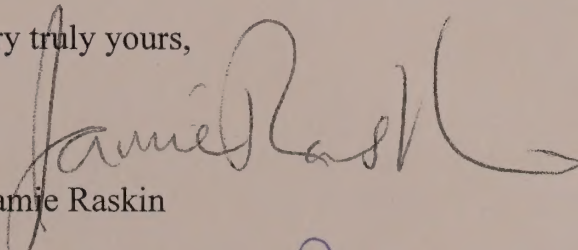
Honorable Martin O'Malley
100 State Circle
Annapolis, MD 21401

Dear Governor O'Malley:

I am writing to respectfully request that you consider funding for the Henry Wallace Beltsville Agricultural Research Center (BARC) when you present Maryland's FY 2012 priorities to our Federal Congressional Delegation. BARC's experienced and innovative researchers are an invaluable resource for the state of Maryland and work on a variety of topics ranging from climate change to bioenergy to genomics. The BARC facility attracts thousands of visitors to the state each year and for a century, its multidisciplinary workforce has made the institution a leader in solving some of the nation's most pressing agricultural problems related to health and safety, economic opportunities, environmental protection and agricultural sustainability.

I hope that you will see fit to include BARC as one of Maryland's 2012 federal priorities. Please feel free to contact me if I can facilitate your decision on this in any way.

Very truly yours,


Jamie Raskin

James - I've got my fingers crossed!
Beet, JBR



FAR-B
Friends of Agriculture Research - Beltsville, Inc.
P.O. Box 1061
Beltsville, Maryland 20704-1061

FAR-B is Dedicated to Promoting the Research and Educational Programs at the
Henry A. Wallace Beltsville Agricultural Research Center at Beltsville, MD

March 17, 2014

The Hon. Barbara A. Mikulski
503 Hart Senate Office Building
United States Senate
Washington, D.C. 20510-2002

ATTN: Brigid Houton

Dear Senator Mikulski:

The Friends of Agricultural Research--Beltsville are pleased to forward outside witness testimony that we have submitted to the Senate and House Appropriations Subcommittees on agriculture and related agencies for fiscal-year 2015 research funding at the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

We strongly endorse funding increases for research programs at Beltsville as proposed in the President's fiscal-year 2015 budget.

The Henry A. Wallace Beltsville Agricultural Research Center – the nation's premier agricultural research center, and its largest – includes the Beltsville Agricultural Research Center, the Beltsville Human Nutrition Research Center, and the research operations of the U.S. National Arboretum. The Center is powerfully, uniquely equipped to address these highest agricultural research priorities, and more:

- Crop Breeding and Protection
- Animal Breeding and Protection
- Enhanced Environmental Stewardship
- Food Safety
- Human Nutrition

Our testimony calls special attention to the compelling need to renovate Beltsville Building 307A. Prospective renovation of this building has approached implementation over past years, yet events have repeatedly intervened to delay implementation. All the while, this valuable research building sits empty, unavailable, deteriorating from neglect. Though we appreciate that funding decisions are not easy, we urge at least minimal funding to protect this valuable building from further deterioration.

Sincerely,

James D. Anderson, PhD
President, FAR-B
janderso1@mac.com



FAR-B is pleased to announce the Research and Education Program at the
Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, MD

March 15, 2014

The Honorable A. Mikulski
601 New Senate Office Building
United States Senate
Washington, D.C. 20510-2002

AT EN: Bright Horizon

Dear Senator Mikulski:

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Sincerely,

James D. Anderson, PhD
President, FAR-B
janderson@farb.com

FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)

P. O. Box 1061

Beltsville, MD 20704-1061

<http://www.far-b.org>

**Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland**

March 19, 2014

The Hon. Rep. C.A. Ruppersberger
2416 Rayburn House Office Building
U.S. House of Representatives
Washington, D.C. 20515-2002

ATTN: Tara Oursier

Dear Congressman Ruppersberger:

The Friends of Agricultural Research--Beltsville are pleased to forward outside witness testimony that we have submitted to the Senate and House Appropriations Subcommittees on agriculture and related agencies for fiscal-year 2015 research funding at the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

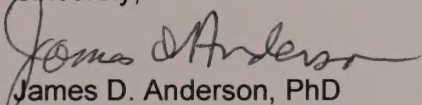
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Sincerely,


James D. Anderson, PhD
President, FAR-B
farbbusiness@yahoo.com



FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE (FAR-B)

P.O. Box 1061

Beltsville, MD 20704-1061, USA

October 16, 2008

The Honorable Steny Hoyer
U.S. House of Representatives
1705 Longworth House Office Bldg,
Washington, DC20515

Dear Congressman Hoyer,

For the past several years, the Friends of Agricultural Research-Beltsville, Inc. (FAR-B), a nonprofit organization has cooperated with the U.S. Department of Agriculture's Beltsville Agricultural Research Center (BARC) in organizing and sponsoring symposiums and conferences. On October 28, 2008, the Animal Improvement Programs Laboratory will be celebrating the 100th anniversary (1908-2008) of USDA's dairy genetics initiative. The conference "Celebrate the Past and Discuss the Future" will be held during the day and will be followed by a banquet that evening. The centennial celebration announcement, a more detailed preliminary agenda, and a registration form are enclosed.

The conference will bring together many of the nation's leading genetics researchers, producers, industry leaders, and consultants to provide input on the future direction of U.S. research on dairy genetics. Because of the subject of the conference is directly related to cooperative research with the University of Maryland, I would like to invite you or one or more of your staff members to attend the conference and banquet.

For more information on celebration events, please contact Melvin Tooker (Melvin.Tooker@ars.usda.gov) or Duane Norman (Duane.Norman@ars.usda.gov) at 301-504-8334.

I hope that you will be able to join FAR-B at the centennial celebration, and I look forward to hearing from you by October 22 if you plan to attend the banquet.

Sincerely,

Dr. Vernon G. Pursel
President, FAR-B, Inc.

3 Enclosures



FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)

P. O. Box 1061

Beltsville, MD 20704-1061

<http://www.far-b.org>

**Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland**

March 31, 2015

The Hon. Robert Aderholt, Chair

Subcommittee on Agriculture, Rural Development, Food and Drug Administration and
Related Agencies

1707 Longworth House Office Building

U.S. House of Representatives Washington, D.C. 20515-2008

ATTN: Jennifer Groover

Dear Congressman Aderholt;

The Friends of Agricultural Research--Beltsville are pleased to forward outside witness testimony that we have submitted to the Senate and House Appropriations Subcommittees on agriculture and related agencies for Fiscal-Year 2016 research funding at the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

We strongly endorse funding proposed in the President's budget. The Henry A. Wallace Beltsville Agricultural Research Center – the nation's premier agricultural research center, and its largest – includes the Beltsville Agricultural Research Center and the Beltsville Human Nutrition Research Center. The Center is uniquely equipped to address its full research program, including these high-priority FY-2016 research initiatives:

- *Translational Livestock Genetics--improving animal production*
- *Antimicrobial Resistance--improving understanding of antimicrobial resistance*
- *Improving Agricultural Sustainability--long-term experiments in sustainability*
- *Combating Antibiotic Resistant Bacteria--preventing antibiotic resistance*
- *Pollinator Health and Colony Collapse Disorder--improving bee health*
- *Vertical Farming--insect and disease control for greenhouse production*
- *Big Data--analyze data sets too large for analysis with traditional data processing*

We are especially pleased that the President's budget includes \$37.1 million to **renovate and modernize Building 307**, a recommendation that we also included in our testimony for the Fiscal-Year 2015 budget.

Sincerely,

James D. Anderson, PhD

President, FAR-B, Inc.

farbbusiness@yahoo.com

FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)

P. O. Box 1061

Beltsville, MD 20704-1061

<http://www.far-b.org>

Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland



March 31, 2015

The Hon. Jeff Merkley, Ranking Member
Appropriations, Subcommittee on Agriculture, Rural Development, Food and Drug
Administration, and Related Agencies
313 Hart Senate Office Building
United States Senate

Washington, D.C. 20510
ATTN: Adrian Deveny

Dear Senator :Merkley;

The Friends of Agricultural Research--Beltsville are pleased to forward outside witness testimony that we have submitted to the Senate and House Appropriations Subcommittees on agriculture and related agencies for Fiscal-Year 2016 research funding at the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

We strongly endorse funding proposed in the President's budget. The Henry A. Wallace Beltsville Agricultural Research Center – the nation's premier agricultural research center, and its largest – includes the Beltsville Agricultural Research Center and the Beltsville Human Nutrition Research Center. The Center is uniquely equipped to address its full research program, including these high-priority FY-2016 research initiatives:

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- *Combating Antibiotic Resistant Bacteria--preventing antibiotic resistance*
- *Pollinator Health and Colony Collapse Disorder--improving bee health*
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- *Big Data--analyze data sets too large for analysis with traditional data processing*

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Sincerely,

James D. Anderson, PhD

President, FAR-B, Inc.

farbbusiness@yahoo.com



FRIENDS OF AGRICULTURAL RESEARCH--BELTSVILLE (FAR--B)

P.O. BOX 1061

BELTSVILLE, MARYLAND 20705-1061

<http://www.far-b.org>

***Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace Beltsville
Agricultural Research Center, Beltsville, Maryland***

DRAFT

April xx, 2017

The Hon. Steny H. Hoyer
1705 Longworth House Office Building
U.S. House of Representatives
Washington, D.C. 20515-2005

12 copies

ATT: Jim Notter (Senior Advisor and Personal Office Director)

Dear Congressman Hoyer:

The Friends of Agricultural Research--Beltsville (FAR-B) are pleased to forward FY-2018 Outside Witness Testimony that we have submitted for funding at the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

We strongly endorse full-funding for the Beltsville Agricultural Research Center. The Center is superbly equipped to carry-out its full research program. We also highly recommend including funding for the following specific, high-priority research or critical operational needs:

- *We recommend \$1million of increased funding to identify and evaluate management practices that maximize plant genetic potential to achieve optimal yield.*
- *We recommend \$3 million of additional funding to create new tools to combat antimicrobial resistance in animals and environmental reactivity to pathogens and protection of public health.*
- *We recommend a \$500,000 increase to develop safe and abundant water supplies to support U.S. agricultural production by using non-traditional water sources.*
- *Lastly, we recommend an annual dedicated appropriation of \$3 million to address critically needed repairs and maintenance. These issues urgently need attention.*

Thank you for your consideration and support for the educational, research, and outreach missions of The Henry A. Wallace Beltsville Agricultural Research Center.

Sincerely,

Allan Stoner, Ph.D.
President, Friends of Agricultural Research-Beltsville

Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related
Agencies

OUTSIDE WITNESS TESTIMONY INSTRUCTIONS FISCAL YEAR 2018
APPROPRIATIONS

Format:

- Testimony (including any supporting material) should be a maximum of four (4) pages, on 8 ½" x 11" paper, single sided, single spaced, and have a 1" margin.
- Do not include a cover page. At the top of the first page, list the name of the person or organization submitting testimony; that it is prepared for the Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies; and which Department and/or Agency the testimony is addressing.

Delivery:

- Delivery is by electronic submission only, as described below. Other forms of delivery, including fax and delivery through the U.S. mail, will not be accepted.
- Please e-mail testimony to agri@appro.senate.gov with the subject line "FY18 AG OWT."
- To facilitate printing, we will only accept testimony in Microsoft Word or Word Perfect formats. DO NOT SEND PDF FILES.
- In the email, please include contact information (name, email, physical address and telephone).

Deadline:

- All material must be received no later than close of business, Friday, May 12, 2017. This deadline will be strictly enforced.

Thank you.

Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related
Agencies

Committee on Appropriations

United States Senate

Washington, DC 20510

James D. Anderson, Ph.D., President; Friends of Agricultural Research – Beltsville, Inc.

P.O.Box1061, Beltsville, MD 20705

(farbbusiness@yahoo.com)

Fiscal Year 2016 Outside Witness Testimony prepared for U. S. Senate Committee on Appropriations, Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies

March 27, 2015

Mister Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for its flagship research facility, **The Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland. Overall, the facility includes the research operations of the Beltsville Agricultural Research Center and the Beltsville Human Nutrition Research Center. We strongly recommend full fiscal-year 2016 funding support for the research programs of The Henry A. Wallace Beltsville Agricultural Research Center.**

Beltsville research has consistently led the way to agricultural progress for well over a century. Whether measured as crop yield per acre, milk and meat yield per animal, or average output per farm worker, the productivity of U.S. agriculture is among the highest in the world. Economic analyses have found consistent evidence that dollars invested in agricultural research return high yields per dollar spent. Net social returns from agricultural research in the United States are estimated to be in the order of 35 percent or more annually. Those returns include benefits not only to the farm sector but also to the food industry and consumers in the form of abundant commodities and food at affordable prices. Still at the threshold of its second century, The Henry A. Wallace Beltsville Agricultural Research Center stands unequalled in scientific capability, breadth of agricultural research portfolio, and concentration of scientific expertise. Its location and close proximity to other Federal research agencies, the University of Maryland and other major research and educational institutions provide a rich opportunity for joint research activities and the leveraging of resources.

We turn now to selected items within the President's FY2016 budget request. We are especially pleased that the President's budget includes \$37.1 million to **renovate and modernize Building 307**, a recommendation that we also included in our testimony for the Fiscal Year 2015 budget.

The Henry A. Wallace Beltsville Agricultural Research Center has moved successfully in recent years to consolidate space and reduce costs. Further progress will be vastly aided by the renovation of Building 307. **This valuable building was vacated some years ago because of deterioration.** The proposed funding will support the design and construction of laboratory space and offices needed to consolidate research now housed in small, aging, energy-inefficient buildings on the research campus. Approval of funding for this purpose is highly recommended.

We also are very pleased the President's Fiscal Year 2016 budget includes increases in critically important research initiatives, which would lead to creating new jobs, enhancing American agriculture competitiveness in the global economy, assuring future food security, protecting crops and animals from diseases and reducing their vulnerability to climate change, while improving the economic and environmental sustainability of American agriculture. The scientists of the Henry A. Wallace Beltsville

Agricultural Research Center are recognized world leaders in the scientific disciplines that are necessary to successfully execute the President's proposed research initiatives. Specifically, we would like to highlight the following initiatives which would enhance the Center's research programs.

Translational Livestock Genetics:

The proposed budget provides \$854,450 of new funding to intensify animal production using modern high throughput trait analyses and advanced genomic tools. The goal is to improve genetic selection of cattle and other ruminants through integrating traditional selection methods with modern DNA marker-based tools. New lines of animals would have greater growth, enhanced adaptation to extreme environments, better survival, and greater fertility. Other expected benefits are improved efficiency of nutrient-use in dairy cattle to lower feed costs and nutrient losses associated with milk production.

Antimicrobial Resistance:

The budget provides \$1,800,000 of new funding to protect public health by improving our understanding how antimicrobial resistance occurs in animals and the environment. Among expected benefits could be novel approaches to boosting animal natural immune systems for resistance to parasitic infections, gut stabilization against pathogens, or novel strategies using antimicrobial growth promoters to limit the consequences of host reactivity to pathogens, and to improve health.

Improving Agricultural Sustainability:

A total of \$900,000 in new funding is provided for the Henry A. Wallace Beltsville Agricultural Research Center to pursue research on benchmark watersheds, experimental pasture lands and research farms to strengthen the long-term Agro-ecosystems Research Network and to establish long-term experiments in agricultural sustainability. Using remote sensing, land surface modeling and ground-based observations, this research aims among other things to monitor the magnitude of agricultural drought and its impact on crop condition and yield as well as characterize the multiple-scale impacts of conservation practices on water quality.

Combating Antibiotic Resistant Bacteria:

The budget provides \$900,000 of new funding to The Henry A. Wallace Beltsville Agricultural Research Center to investigate protecting public health by preventing antibiotic resistance. This research aims at developing genetic biotechnologies that include novel antimicrobials for improved animal health and product safety, also for using functional genomics to control disease in animals, particularly in poultry.

Pollinator Health and Colony Collapse Disorder:

A total of \$900,000 in new funding is requested to develop, in cooperation with industry, best management practices for beekeepers. This research uses integrated laboratory and field approaches that among other things may lead to better diagnosis and mitigating disease, counteracting negative impact of environmental chemicals, and improved bee health through better nutrition.

Vertical Farming:

The budget has \$264,546 of new funding to provide new methods and technologies for insect and disease control related to greenhouse production.

Big Data:

The budget also requests \$180,000 in new funding for the Center to create a new research project that will facilitate the creation of scientific networks with shared research strategies and build a linked data collection through the Long-term Agro-ecosystems Research Network. Big Data is an emerging scientific field fueled by advances in data collection, transfer, curation, sharing, storage, and visualization. Big Data makes it possible to analyze data sets that are too large for analysis with traditional data processing applications. The benefits can be numerous. In the environmental sciences, this technology allows scientists to discover new correlations and trends that may make it possible, for example, to prevent water contamination or other undesirable environmental changes.

In summation, Mr. Chairman, **we re-confirm that The Henry A. Wallace Beltsville Agricultural Research Center has forged a well-earned, distinguished reputation for successfully translating basic research into agricultural and human nutrition solutions and advances that benefit all of society.** Beltsville has become an indispensable national leader in the long agricultural research continuum that allows us to become ever-better stewards of land and water resources, to introduce new products based on agricultural commodities, and to make food and agricultural products more affordable, safer, and more readily abundant for all Americans. **Again, we recommend full funding for research programs of The Henry A. Wallace Beltsville Agricultural Research Center.**

Mr. Chairman, this concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of The Henry A. Wallace Beltsville Agricultural Research Center.

Sincerely,

James D. Anderson, Ph.D.

President, Friends of Agricultural Research-Beltsville, Inc.

**Testimony for the
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
of the Committee on Appropriations
U. S. House of Representatives**

March 10, 2008

Madam Chair, and Members of the Subcommittee, thank you for this opportunity to present our statement regarding funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland**. Our organization—**Friends of Agricultural Research--Beltsville**—promotes the Center's current and long-term agricultural research, outreach, and educational missions.

Our testimony will emphasize these **main themes**:

First, we strongly recommend continued funding for certain **high-value, on-going research** that the Congress has previously approved for BARC. Yet, this crucially needed on-going research is **marked for termination** in the President's FY08 budget. We discuss the basis and rationale for our recommendation in Part I, below.

Second, we recommend and endorse continued full support for **redirected research** in the President's budget. We briefly expand the basis of our support in Part II.

Third, we will offer a brief comment on the proposed relocation staff and program from the Grand Forks Human Nutrition Research Center to Beltsville in Part III.

Part I. High-Value Research Marked For Termination

Animals Biosciences & Biotechnology Laboratory (ABBL) - \$8,401,123: ABBL's research mission is to improve the genetic, reproductive, and feed efficiency of livestock and poultry. A dedicated staff of 32 employees, of which 13 are research scientists, are addressing a number of cutting-edge research issues: using pig embryonic stem cells to enhance disease resistance in pigs and for clinical use in human liver rescue devices; designing novel antimicrobial proteins for treatment of human (methicillin-resistant staph aureus) and animal (bovine mastitis) diseases; identifying genetic markers to reduce fetal pig mortality. This cutting-edge work is well regarded in the greater scientific community. Loss of this funding will essentially close out the only research of this type in ARS. It has been suggested that a reason for the proposed closure is inadequacy of facilities. But in the judgment of highly qualified scientists, inadequacy of facilities is simply not an issue.

The research in this laboratory is both basic and applied and is valuable to all of the animal industries. The research addresses the very issue of genetic improvement of animals for those traits that are most desirable to consumers and profitable for producers. In addition, this research has proven to be very valuable to the biomedical community because the information obtained is useful to promote human health. **Restoration of funding for this invaluable research is critically needed.**

Biomedical Materials in Plants - \$1,808,253: Plants can be used as factories to manufacture vaccines and other pharmaceuticals for animals and humans. This research focuses on development of tobacco as a crop with his beneficial use. **We recommend restoring full funding.**

Bioremediation Research - \$118,167: Munitions storage sites and bombing ranges in parts of the U.S. have left huge tracts of soils and lands contaminated by highly toxic residues from such explosives as TNT. Those

soils and lands now are limited environmentally for commercial or agricultural purposes. These funds support ongoing research to determine if forage plants can remove TNT and its metabolites from contaminated sites. Beltsville is a world recognized leader in the field of bioremediation. This work is not done anywhere else in ARS. **We recommend funding for this research.**

Foundry Sand By-Products Utilization - \$680,205: Waste sands from the metal casting industry currently are dumped in landfills. This project is working with industry on guidelines for beneficial uses of these sands. **We recommend that this research continue.**

Poultry Diseases - \$434,934: Coccidiosis, a parasitic poultry disease, costs the industry almost \$3 billion per year. This research focuses on understanding the genetics of both the parasite and the host chicken to identify targets that will allow better disease prevention and control. **We recommend that this research continue.**

Potato Diseases - \$64,545: These funds are used for research activities on genetic improvement of potato and for diseases of potato. While a small amount of money, these funds are used to supplement ongoing efforts in this important area. **We recommend that this research continue.**

Part II. Redirected Research

The budgetary items listed here have not appeared in our testimony of previous years. In terms of overall BARC funding, they are revenue neutral. Essentially, these are “new” programs replacing similar but lower-priority, on-going programs that would be closed out. Ideally, all the research programs, new and old, would continue. All are important lines of research, and we would prefer to see new funding rather than redirection. Nevertheless, BARC can manage within these redirections if there is no option. **We strongly support funding for this research.**

Crop Health - \$947,322

Obesity Prevention Initiative - \$1,937,649

Food Safety - \$1,045,629

Crop Genetic Improvement - \$ 938,385

Part III. Relocation staff and program from the Grand Forks Human Nutrition Research Center to Beltsville.

The FY09 budget also proposes to relocate a significant number of staff and program from the Grand Forks Human Nutrition Research Center to Beltsville. **We are neutral about this redirection.**

Madam Chair, that concludes our statement. We again thank you for the opportunity to present our testimony and for your generous support.

Sincerely,

K. Darwin Murrell, Ph.D.
President

2000-2001



FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)

P. O. Box 1061

Beltsville, MD 20704-1061

<http://www.far-b.org>

**Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland**

**Written Public Testimony for (Fiscal Year 2012)
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
Committee on Appropriations
United States Senate**

**Statement by the Friends of Agricultural Research--Beltsville
March 23, 2011**

Mister Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the of Agriculture Department's Agricultural Research Service (ARS), and especially for the ARS flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland**. Our organization—the **Friends of Agricultural Research -- Beltsville**—promotes the Center's current and long-term agricultural research, outreach, and educational missions.

We begin, Mr. Chairman, by citing from Agriculture Secretary's Tom Vilsack's March 10, 2011, remarks before the Senate Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies. To quote from Secretary's Vilsack's remarks: **"Scientific research is essential for achieving [our] goals. To promote American innovation, new discoveries, and new industries, we continue to target and focus additional research dollars in key areas, like biofuel feedstocks, livestock and crop production and protection, ecosystem market foundations, and biotechnology."** Also: **"We will invest in research to spur innovation, promote exports, support renewable energy and conservation, and enhance critical infrastructure in rural communities."**

Our organization could not agree more strongly with Secretary Vilsack. Writing on world food in the March 14, 2011, *Washington Post*, highly regarded columnist Robert J. Samuelson warned, "the global food squeeze is largely an uncovered story." According to Samuelson, global food demand is colliding with strained food supplies. Middle East countries, he notes, are importing 50 percent of more of their wheat, and looking back from February world wheat prices have doubled in eight months. Calling the situation the "Great Food Crunch", Samuelson cites growing affluence leading to higher consumption of meat and dairy products, and exploding population growth as major contributing factors. Looking ahead, he notes that from 2010 to 2050 world population is projected to grow by 38 percent, from 6.9 billion to 9.5 billion.

Can world food production keep pace with growing demand? There are those who would argue that it cannot. Yet the more hopeful of us take reassurance in technological advances originating from BARC. Please consider: as recently as 1950 U.S. average corn yields were 38 bushels per acre. Average wheat yields were 17 bushels per acre. By 2010, average U.S. corn yields had jumped to 153 bushels per acre, while average wheat yields grew to an impressive 46 bushels per acre. Technological discoveries from Beltsville contributed tremendously to that progress. For decades, Beltsville has stood at the forefront of technical advances in agriculture. In 2010, the Center celebrated 100 years of research accomplishments. The Center's landmark technological achievements over that time are truly remarkable. We would be pleased to provide documentation should the Subcommittee so wish.

Today, Beltsville is unequalled in scientific capability, breadth of agricultural research program, and concentration of scientific expertise. Under the leadership of Director Joseph Spence and with its powerful scientific capability, the Beltsville Agricultural Research Center remains unique and indispensable to meeting the challenges that lie ahead.



FRIENDS OF AGRICULTURAL RESEARCH - BELLEVILLE, ILL. (FAR-B)
P. O. Box 1081
Belleville, MO 63010-1081
This year's focus is
Committee to Examine the Research and Extension Needs of the Henry A. Wallace
Pilot Program for Agricultural Research, Extension, and Education

Statement by the Friends of Agricultural Research - Belleville
March 28, 2017
Committee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
House Committee on Agriculture
U.S. House of Representatives

Major Chairman and Members of the Subcommittee, thank you for this opportunity to present our
statement supporting funding for the Agricultural Research Service (ARS) and extension
and research for the ARS Training Center (ATC), the Henry A. Wallace Beltsville Agricultural
Research Center (BARC), and related programs. The organization - the Friends of Agricultural Research -
Belleville - promotes the Center's current and long-term agricultural research, extension, and education
programs.

We thank the Chairman for sharing with Agriculture Secretary Tom Vilsack's March 10, 2017 remarks
before the Senate Agriculture Subcommittee on Agriculture, Rural Development, Food and Drug
Administration and Related Agencies. To quote from Secretary Vilsack's remarks: "Belleville research
and extension work is essential for achieving four goals: to promote American innovation, new discoveries, and new
products; to ensure the safety and security of our food; to protect and enhance our natural resources; and
to ensure the sustainability of our rural communities." We agree with Secretary Vilsack's vision for the future
of agriculture and the role of research and extension in achieving these goals.

Our organization does not agree more strongly with Secretary Vilsack's vision for the future
of agriculture and the role of research and extension in achieving these goals. The ARS and
extension programs are essential for achieving these goals. The ARS and extension programs
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Today, Belleville is recognized as a national leader in agricultural research, extension, and
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extension, and education programs are essential for achieving these goals.

We are aware of the financial constraints facing our country. We are aware, too, of urgent demands for funding among compelling national priorities. Securing ample, safe, and nutritious food -- food security -- has always been the most compelling of human priorities. That is true today, and it will be no less so in the years ahead. Commentators such as Robert Samuelson speculate that as much as oil, scarce food could shape global politics for decades to come.

In summation, Mr. Chairman, we strongly support adequate funding for the Beltsville Agricultural Research Center. We would respectfully suggest that adequately funding the Agriculture Department's flagship research center is central to maintaining national and world food security.

Priorities in the President's FY-2012 Budget Request—

Now, Mr. Chairman, we turn to key research areas highlighted in the President's proposed budget. We strongly recommend this proposed funding. Our recommendation is consistent with the remarks of Secretary Vilsack.

Animal Breeding and Protection

\$1,000,000

- Beltsville has extensive research activity related to animal production and animal health.
- Research conducted at BARC is the foundation for the dairy industry in its research on the genetic prediction of dairy cows that can more efficiently meet the nation's dairy needs. Slight differences in milk production by a cow can mean the difference between profitability and loss by dairy farmers.
- Research at BARC is aimed at preventing development of resistance to drugs used for treating cattle for parasites.

Crop Breeding and Protection

\$1,000,000

- Beltsville scientists have an extensive record of ongoing research relating to protecting crops from pests and emerging pathogens.
- Beltsville has unique expertise to identify pathogens such as nematodes and insects that can destroy crops or make crops ineligible for export to other countries.
- Beltsville also houses the *Germplasm Resource Information Network*, the U.S. coordinating body to identify and catalog plant germplasm. It is essential to maintain these important functional operations to identify plant germplasm that is diseases resistant, drought tolerant, and most valuable to the consumer.

Child and Human Nutrition

\$4,500,000

Mr. Chairman, that concludes our statement. Thank you for your kind words and support for the structural research and support provided at the Beltsville Agricultural Research Center.

- Beltsville houses the nation's largest, most comprehensive Federally funded human nutrition research center, the *Beltsville Human Nutrition Research Center (BHNRC)*.
- Unique activities include the *What We Eat in America* survey, which is the government's nutrition monitoring program and the *National Nutrient Databank*, the gold standard reference of food nutrient content. It is used throughout the world. These two activities are the basis for food labels, nutrition education programs, food assistance programs including *SNAP*, the *Supplemental Nutrition Assistance Program*, school feeding programs, and government nutrition education programs.
- The research facilities at *BHNRC* feature unique feeding facilities and are used in collaboration with other Federal agencies, including the *National Institutes of Health*, industry and university partners.
- Obesity is a serious problem in the United States and it must be dealt with. Effective nutrition programs aimed at preventing the onset of obesity are needed to prevent the high costs of medical care associated with the epidemic of obesity in this country.

Global Climate Change

\$ 800,000

- Beltsville had been actively engaged in climate change research long before climate change became a topic of discussion in the media.
- Beltsville scientists are at the forefront of climate change research -- understanding how climate change affects crop production and the effects of climate change on growth and spread of invasive and undesirable plants (such as weeds.) A central aim is finding ways to mitigate effects of climate change on crops.
- Beltsville houses truly unique facilities for replication of climates of the past and those that might exist in the future. Scientists here are able to model the effects of climate change and to develop strategies to mitigate the effects of any changes in climate.

Plant, Animal, and Microbial Collections

\$1,250,000

- BARC houses many truly unique national biological collections that are indispensable to the well-being of American agriculture. In addition to the actual collections, BARC scientists are internationally recognized for their expertise and ability to quickly and properly identify threats to agriculture.
- This expertise is crucial to preventing loss of crops and animals, ensuring that threats to American agriculture are identified before they can enter the country, ensuring homeland security, and ensuring that American exports are free of pests and pathogens that could prohibit exports to other countries.
- Collections and expertise include insect pests, fungal pathogens, bacterial threats, and nematodes.
- BARC houses the *National Animal Parasite* collection and has the expertise to identify parasites that are of importance to agricultural animals.

Mr. Chairman, that concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of the Beltsville Agricultural Research Center.

Sincerely,

K. Darwin Murrell, Ph.D.
President (Acting)

Stokely

R. D. Stokely, Jr.
President (1964-65)

**James D. Anderson, Ph.D., President, Friends of Agricultural Research – Beltsville, Inc.
Fiscal Year 2014 Outside Witness Testimony prepared for U. S. Senate Committee on
Appropriations, Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies**

March 20, 2013

Mister Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the USDA's Agricultural Research Service (ARS), and especially for its flagship research facility, the **Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Beltsville Maryland.** We strongly recommend full fiscal-year 2014 funding support for research programs at Beltsville.

Usually, our testimony would discuss relevant sections of the President's annual budget proposal. This year, however, it appears as though the President's annual budget proposal may not be available before the March 20 deadline the Subcommittee has announced for accepting testimony from interested Members and outside witnesses. Thus, drawing on a discussion with Subcommittee staff, our testimony for Fiscal Year 2014 generally summarizes and re-states the testimony that we submitted a year ago.

Henry A. Wallace Beltsville Agricultural Research Center -- the nation's premier agricultural research center -- has spearheaded technical advances in American agriculture for over 100 years. Beltsville celebrated 100 years of research leadership and technical advances in 2010. The long list of landmark research achievements over that time is truly remarkable. Still at the threshold of its second century, Beltsville stands unequalled in scientific capability, breadth of agricultural research portfolio, and concentration of scientific expertise. Under the leadership of Director Dr. Joseph Spence and with its powerful scientific capability, the Beltsville Agricultural Research Center is distinctively, indispensably prepared for the challenges that lie ahead.

Priorities in the President's FY-2013 Budget Request—

Now, Mr. Chairman, we turn to key research areas highlighted in the President's proposed Fiscal Year 2013 budget. We continue to strongly recommend this proposed funding as we did a year ago.

We were pleased to see that the FY2013 budget includes increases for environmental stewardship; crop breeding and protection; animal breeding and protection; food safety; and human nutrition. Obviously, these are areas of great concern to all Americans, and they are certainly among the highest priorities for agricultural research today. All of these research areas are strengths of the Beltsville Agricultural Research Center and they will benefit well from the unique facilities and scientific expertise at the Center. We encourage you to seriously consider funding the proposed budget and to ensure that Beltsville receives the funding that it needs to address these critical research needs.

Although funds are not requested for major facilities projects in the FY2013 budget, we would like to bring to your attention the urgent need for renovation of Building 307 on the Beltsville campus. The Center has aggressively moved to consolidate space and reduce costs and has been very successful at doing so. However, these plans require the renovation of a building -- Building 307 -- that was vacated some years ago in anticipation of a complete renovation. In the past, Congress approved partial funding for this renovation, and those monies were retained pending appropriation of the full amount required for the renovation. Unfortunately, those funds now have been lost to ARS. Consequently, renovation of this vacant, highly useful building is on indefinite hold. While we realize that funding is extremely tight, we confirm that Beltsville urgently needs a renovated Building 307 for adequate, high quality lab space. Moreover, a renovated Building 307 would not only yield substantial energy savings, but also would allow Beltsville to move forward with other long-delayed relocation and consolidation plans. At a minimum, funds are urgently needed to stabilize this vacant building from continuing deterioration.

In summation, we would highlight these spheres of excellence:

Animal Breeding and Protection: Beltsville conducts extensive research on animal production and animal health. The research center is the foundation of genetic improvement in dairy cow production. Beltsville is examining ways to prevent resistance to drugs for animal parasite prevention and control.

Crop Breeding and Protection: Beltsville scientists have an extensive record of ongoing research relating to protecting crops from pests and emerging pathogens. Beltsville has distinctive expertise for identifying pathogens, nematodes, and insects that destroy crops or make crops ineligible for export. Beltsville houses the *Germplasm Resource Information Network*, the U.S. coordinating body to identify and catalog plant germplasm.

Child and Human Nutrition: The *Beltsville Human Nutrition Research Center (BHNRC)* is the nation's largest, most comprehensive federal human nutrition research center; unique activities include the *What We Eat in America* survey, which is the government's nutrition monitoring program, and the *National Nutrient Databank*, which is the gold standard reference of food nutrient content that is used throughout the world. These two activities are the basis for food labels, nutrition education programs, food assistance programs including *SNAP, the Supplemental Nutrition Assistance Program*, school feeding programs, and government nutrition education programs.

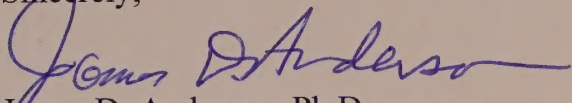
Global Climate Change: Beltsville became actively engaged in climate change research long before climate change became a topic of intense media interest. Beltsville scientists are at the forefront of climate change research -- understanding how climate change affects crop production and the effects of climate change on growth and spread of invasive and detrimental plants (such as weeds). A central aim is finding ways to mitigate negative effects of climate change on crops. Beltsville houses unequalled facilities for replicating past climates or climates that may exist in the future.

Plant, Animal, and Microbial Collections: Beltsville houses matchless national biological collections that are indispensable to the well-being of American agriculture. In addition to the actual collections, Beltsville scientists are internationally recognized for their expertise and ability to quickly and properly identify insect pests, fungal pathogens, bacterial threats, and nematodes. This expertise is crucial to preventing loss of crops and animals, ensuring that invasive threats to American agriculture are identified before they can enter the country, thus helping to protect homeland security, and ensuring that American exports are free of pests and pathogens that could prohibit exports. Also, Beltsville houses the *National Animal Parasite*

collection and has the expertise to identify parasites that are of importance to agricultural animals.

Mr. Chairman, this concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of the Beltsville Agricultural Research Center.

Sincerely,

A handwritten signature in blue ink, reading "James D. Anderson". The signature is fluid and cursive, with the first name "James" and last name "Anderson" clearly legible. The signature is positioned above the printed name.

James D. Anderson, Ph.D.

President

Friends of Agricultural Research-Beltsville



FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)
P. O. Box 1061
Beltsville, MD 20704-1061
<http://www.far-b.org>

Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland

March 27, 2013

The Hon. Elijah E. Cummings
2235 Rayburn House Office Building
U.S. House of Representatives
Washington, D.C. 20515-2007

ATTN: Lucinda Lessley

Dear Congressman Cummings:

The Friends of Agricultural Research--Beltsville encloses outside witness testimony to the Appropriations Subcommittee on agriculture and other agencies regarding FY-2014 funding for the Beltsville Agricultural Research Center (BARC), in Beltsville, Maryland.

Usually, our testimony would discuss relevant sections of the President's annual budget proposal. This year, however, it appears as though the President's annual budget proposal may not be available before the March 20 deadline the Subcommittee has announced for accepting testimony from interested Members and outside witnesses. Thus, drawing on a discussion with Subcommittee staff, our testimony for Fiscal Year 2014 generally summarizes and re-states the testimony that we submitted a year ago.

We were pleased that the FY-2013 budget included increases for environmental stewardship; food safety; human nutrition, and crop and animal genetics and protection. BARC has a world-renowned reputation for scientific achievement and is exceptionally well suited to expand research in these areas. Investment in BARC's research will, as history shows, pay great dividends to the nation's nutritional and environmental well-being. In the **summary remarks**, we highlight several spheres of BARC's scientific excellence.

Last, we call attention to a crucial need to renovate Building 307. This oft-postponed renovation effectively blocks long-range plans for energy saving and for consolidating and upgrading vital laboratory facilities. At minimum, funds are urgently needed to protect this vacant building from continuing deterioration.

Sincerely,

James D. Anderson, PhD
President, FAR-B
janderso1@mac.com

James D. Anderson, Ph.D., President, Friends of Agricultural Research – Beltsville, Inc.
Fiscal Year 2013 testimony prepared for U. S. Senate Committee on Appropriations,
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies

March 13, 2012

Mister Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the USDA's Agricultural Research Service (ARS), and especially for its flagship research facility, the **Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Beltsville Maryland.** We strongly recommend full fiscal-year 2013 funding support for research programs at Beltsville.

We begin our recommendations, Mr. Chairman, by drawing attention to Agriculture Secretary's Tom Vilsack's February 13, 2013, remarks on the proposed FY 2013 budget: **"USDA has supported farmers, ranchers and growers so that last year they enjoyed record farm income. ...To help sustain record farm income, we will invest in research and development to improve agricultural productivity. [And continue] support for in-house research and the land grant universities. We'll continue our efforts to combat destructive pests and disease that threaten crops and livestock.**

Following a Department-wide review of operations, we created a Blueprint for Stronger Service to make USDA work better and more efficiently for the American people. We found savings in areas like technology, travel, supplies and facilities. We've been able to avoid the interruptions in service that come with furloughs and employee layoffs. "

The **Blue Print for a Stronger Service** holds out substantive agency-wide impacts for the Agricultural Research Service as a whole as well as for Beltsville in particular. The agency is streamlining its business operations, consolidating activities such as human resources and procurement into three "business service centers." In FY11, ARS cut its travel costs by approximately 28 percent from the past year, and the ARS printing fund has been cut by more than half. While continuing to serve the research needs of American agriculture and the nation, ARS is committed to "doing more with less."

We strongly endorse the **remarks of Secretary Vilsack** and the purposes and goals of **the Blue Print for a Stronger Service.** Overall, ARS will close 12 of its research programs at 10 locations in 2012, none of them at Beltsville--a recognition of the outstanding research conducted at Beltsville.

Beltsville -- the nation's premier agricultural research center -- has spearheaded technical advances in American agriculture for over 100 years. Beltsville celebrated 100 years of research leadership and technical advances in 2010. The long list of landmark research achievements over that time is truly remarkable. Still at the threshold of its second century, Beltsville stands unequalled in scientific capability, breadth of agricultural research portfolio, and concentration of scientific expertise. Under the leadership of Director Dr. Joseph Spence and with its powerful scientific capability, the Beltsville Agricultural Research Center is distinctively, indispensably prepared for the challenges that lie ahead.

Toward that end, the scientists of Beltsville have **developed a new, bold vision for the future.** Titled **Innovation and Integration: Agricultural Research for a Growing World**, this visionary document stems from the realization that broader, multidisciplinary approaches will be needed to address new, perhaps unforeseeable agricultural challenges of the future. New approaches will be needed to reach beyond the confines of traditional research approaches tied to narrow issues or specific commodities. Traditionally, for instance, plant scientists may have worked in some combination with animal scientists or with human nutritionists. Only rarely, however, have scientists combined efforts across many disciplines to solve problems. Given its broad research portfolio and its many disciplines, Beltsville is perfectly situated for broad, multidisciplinary approaches to flourish. **Thus, in every way, Beltsville remains and will continue to be a national Center of Excellence for the highest agricultural research priorities.**

We are aware of the financial constraints facing our country. We are aware, too, of urgent demands for funding among compelling national priorities. Securing ample, safe, and nutritious food -- food security -- has always been the most compelling of human priorities. That is true today, and it will be no less so in the years ahead. Commentators such as Robert Samuelson speculate that as much as oil, scarce food could shape global politics for decades to come. In summation, Mr. Chairman, we strongly support adequate funding for Beltsville. We would respectively suggest that adequate funding for the Agriculture Department's flagship research center is central to maintaining national and world food security.

Priorities in the President's FY-2013 Budget Request—

Now, Mr. Chairman, we turn to key research areas highlighted in the President's proposed budget. We strongly recommend this proposed funding. Our recommendation is consistent with the remarks of Secretary Vilsack.

We were pleased to see that the FY2013 budget includes increases for environmental stewardship; crop breeding and protection; animal breeding and protection; food safety; and human nutrition. Obviously, these are areas of great concern to all Americans, and they are certainly among the highest priorities for agricultural research today. All of these research areas are strengths of the Beltsville Agricultural Research Center and they will benefit well from the unique facilities and scientific expertise at the Center. We encourage you to seriously consider funding the proposed budget and to ensure that Beltsville receives the funding that it needs to address these critical research needs.

Although funds are not requested for major facilities projects in the FY2013 budget, we would like to bring to your attention the urgent need for renovation of Building 307 on the Beltsville campus. The Center has aggressively moved to consolidate space and reduce costs and has been very successful at doing so. However, these plans require the renovation of a building -- Building 307 -- that was vacated some years ago in anticipation of a complete renovation. In the past, Congress approved partial funding for this renovation, and those monies were retained pending appropriation of the full amount required for the renovation. Unfortunately, those funds now have been lost to ARS. Consequently, renovation of this vacant, highly useful building is on indefinite hold. While we realize that

funding is extremely tight, we confirm that Beltsville urgently needs a renovated Building 307 for adequate, high quality lab space. Moreover, a renovated Building 307 would not only yield substantial energy savings, but also would allow Beltsville to move forward with other long-delayed relocation and consolidation plans.

In summation, we would highlight these spheres of excellence:

Animal Breeding and Protection: Beltsville conducts extensive research on animal production and animal health. The research center is the foundation of genetic improvement in dairy cow production. Beltsville is examining ways to prevent resistance to drugs for animal parasite prevention and control.

Crop Breeding and Protection: Beltsville scientists have an extensive record of ongoing research relating to protecting crops from pests and emerging pathogens. Beltsville has distinctive expertise for identifying pathogens, nematodes, and insects that destroy crops or make crops ineligible for export. Beltsville houses the *Germplasm Resource Information Network*, the U.S. coordinating body to identify and catalog plant germplasm.

Child and Human Nutrition: The *Beltsville Human Nutrition Research Center (BHNRC)* is the nation's largest, most comprehensive federal human nutrition research center; unique activities include the *What We Eat in America* survey, which is the government's nutrition monitoring program, and the *National Nutrient Databank*, which is the gold standard reference of food nutrient content that is used throughout the world. These two activities are the basis for food labels, nutrition education programs, food assistance programs including *SNAP*, the *Supplemental Nutrition Assistance Program*, school feeding programs, and government nutrition education programs.

Global Climate Change: Beltsville became actively engaged in climate change research long before climate change became a topic of intense media interest. Beltsville scientists are at the forefront of climate change research -- understanding how climate change affects crop production and the effects of climate change on growth and spread of invasive and detrimental plants (such as weeds.) A central aim is finding ways to mitigate negative effects of climate change on crops. Beltsville houses unequalled facilities for replicating past climates or climates that may exist in the future.

Plant, Animal, and Microbial Collections: Beltsville houses matchless national biological collections that are indispensable to the well-being of American agriculture. In addition to the actual collections, Beltsville scientists are internationally recognized for their expertise and ability to quickly and properly identify insect pests, fungal pathogens, bacterial threats, and nematodes. This expertise is crucial to preventing loss of crops and animals, ensuring that invasive threats to American agriculture are identified before they can enter the country, thus helping to protect homeland security, and ensuring that American exports are free of pests and pathogens that could prohibit exports. Also, Beltsville houses the *National Animal Parasite* collection and has the expertise to identify parasites that are of importance to agricultural animals.

Mr. Chairman, this concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of the Beltsville Agricultural Research Center.

Sincerely,

James D. Anderson,

President, Friends of Agricultural Research-Beltsville

**James D. Anderson, Ph.D., President, Friends of Agricultural Research – Beltsville, Inc
Fiscal Year 2015 Outside Witness Testimony prepared for U. S. House of Representatives
Appropriations Committee, Subcommittee on Agriculture, Rural Development, Food and
Drug Administration, and Related Agencies**

March 18, 2014

Mister Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the USDA's Agricultural Research Service (ARS), and especially for its flagship research facility, the **Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Beltsville Maryland**. We strongly recommend full fiscal-year 2015 funding support for research programs at Beltsville.

Henry A. Wallace Beltsville Agricultural Research Center -- the nation's premier agricultural research center that includes the Beltsville Human Nutrition Research Center and the research operations of the U.S. National Arboretum -- has spearheaded technical advances in American agriculture for over 100 years. Beltsville celebrated 100 years of research leadership and technical advances in 2010. The long list of landmark research achievements over that time is truly remarkable. Still at the threshold of its second century, Beltsville stands unequalled in scientific capability, breadth of agricultural research portfolio, and concentration of scientific expertise. The location of BARC in close proximity to many other Federal research agencies as well as the University of Maryland allows for significant joint research activities and the leveraging of resources.

Priorities in the President's FY2015 Budget Request—

Now, Mr. Chairman, we turn to key research areas that were highlighted in the President's proposed Fiscal Year 2015 budget. **We were pleased to see that the FY2015 budget includes increases for crop breeding and protection; animal breeding and protection; enhanced environmental stewardship; food safety; and human nutrition. Obviously, these are areas of great importance to all Americans, and they are certainly among the highest priorities for agricultural research today. All of these research areas are strengths of the Beltsville Agricultural Research Center and they will benefit well from the unique facilities and scientific expertise at the Center. We encourage you to seriously consider funding the proposed budget and to ensure that Beltsville receives the funding that it needs to address these critical research needs.**

In summation, we would highlight these spheres of excellence:

Crop Breeding and Protection: Beltsville scientists have an extensive record of ongoing research relating to protecting crops from pests and emerging pathogens. Beltsville's Bee Research Laboratory is at the forefront of efforts to determine the cause of colony collapse disorder that is devastating the bee industry that is critical for the pollination of many crops. Beltsville houses matchless national biological collections that are indispensable to the well-being of American agriculture. In addition to the actual collections, Beltsville scientists are internationally recognized for their expertise and ability to quickly and properly identify insect pests, fungal pathogens, bacterial threats, and nematodes. This expertise is crucial to preventing loss of crops ensuring that invasive threats to American agriculture are identified before they can

enter the country, thus helping to protect homeland security, and ensuring that American exports are free of pests and pathogens that could prohibit exports. At BARC, research on the breeding of crops and plants has led to improved varieties of vegetables, nursery stock, fruits and even turf grasses.

Animal Breeding and Protection: Beltsville conducts extensive research on animal production and animal health. The U.S. Poultry industry depends on Beltsville scientists to develop new and more effective vaccines and immunological approaches to prevent losses to flocks. Animal scientists at BARC have been using cutting-edge genomic approaches to increase the feed efficiency of animals used for food and to improve disease resistance in farm animals. Many of the emerging diseases affecting humans are zoonotic in that they arise first in animals. By understanding these diseases in animals and how they might be controlled, BARC scientists are helping human as well as animal health. BARC has worked with the Smithsonian Museum of Natural History to ensure the continued curation of the National Animal Parasite collection and with the dairy industry to transfer the technology to enhance milk yield in dairy cows. Both of these activities allow for BARC scientists to continue to meet the needs of commodity groups and producers and to leverage its resources to expand research activities.

Enhanced Environmental Stewardship: BARC scientists are at the forefront of research aimed at development of climate resilient land, crop, grazing and livestock production systems. Beltsville became actively engaged in climate change research long before climate change became a topic of intense media interest; scientists have been able to increase our understanding how climate change affects crop production and the effects of climate change on growth and spread of invasive and detrimental plants such as weeds. The facilities at BARC to replicate environmental changes and to model changes in plant production are truly unique. Since BARC is an actively farmed facility that is close to an urban center and drains into the Chesapeake Bay, it is significantly involved in research on agriculture at the ag-urban interface and for controlling agricultural impacts on the environment.

Food Safety: BARC houses the largest food safety laboratory in the Agricultural Research Service. It is highly regarded for its research on improving the safety of animal products by improving pathogen reduction on the farm. This is a significant issue as this research is able to reduce the use of antibiotics in agriculture and greatly reduce the development of antibiotic resistant organisms in the environment and in humans. Beltsville scientists have been and continue to be involved in research aimed at keeping pathogens out of our fruits and vegetables and to develop effective and efficient ways of monitoring contamination of these important commodities.

Human Nutrition: The Beltsville Human Nutrition Research Center (BHNRC) is the nation's largest, oldest and most comprehensive federal human nutrition research center. Unique activities at BHNRC include conducting the *What We Eat in America* survey, which is the government's nutrition monitoring program, and the *National Nutrient Databank*, which is the gold standard reference of food nutrient content that is used throughout the world. These two activities are the basis for food labels, nutrition education programs, food assistance programs including SNAP, the Supplemental Nutrition Assistance Program, school feeding programs, and government nutrition education programs. Human feeding studies conducted by BHNRC

scientists were the first ever to demonstrate the harmful effects of *trans* fats in the human diet and they have worked with the food industry develop alternatives for their removal from the food supply.

Food Quality Laboratory: The Laboratory concerned with maintaining and enhancing fruit and vegetable food quality is to be redirected, but the research funding is to remain at the Center. We are supportive of keeping the funding for these projects concerning food quality at the Henry A. Wallace Beltsville Agricultural Research Center.

You can see that the Beltsville Agricultural Research Center conducts impactful research in those areas that are a priority in the President's FY2015 budget. It is perhaps one of the real strengths of the Center that research is conducted in each of these areas thereby allowing for unique multidisciplinary activities that cut across each of these priorities. It is not uncommon at BARC to see plant scientists working side by side with animal scientists. The Beltsville Human Nutrition Research Center hired a climate change scientist over ten years ago. The research conducted at BARC not only adds to our scientific knowledge but truly improves the quality of life for all Americans and significantly impacts American agriculture.

Lastly, Mr. Chairman, I would like to call to your attention an urgent facilities need that is high lighted in the President's FY2015 budget. The Center has aggressively moved to consolidate space and reduce costs and has been very successful at doing so. However, these plans requires the renovation of a building -- Building 307A -- that was vacated some years ago in anticipation of a complete renovation. In the past, Congress approved partial funding for this renovation, and those monies were retained pending appropriation of the full amount required for the renovation. Unfortunately, those funds now have been lost to ARS. Consequently, renovation of this vacant, highly useful building is on indefinite hold. While we realize that funding is extremely tight, we affirm that Beltsville urgently needs a renovated Building 307A for adequate, high quality lab space. Moreover, a renovated Building 307A would not only yield substantial energy savings and reduce operating costs, but also would allow Beltsville to move forward with other long-delayed relocation and consolidation plans. At a minimum, funds are urgently needed to stabilize this vacant building from continuing deterioration.

Mr. Chairman, this concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of the Beltsville Agricultural Research Center.

Sincerely,

James D. Anderson, Ph.D.
President
Friends of Agricultural Research-Beltsville
farbbusiness@yahoo.com

FRIENDS OF AGRICULTURAL RESEARCH--BELTSVILLE, INC.
P.O. Box 1061, Beltsville, Maryland 20704-1061

March 25, 2004

The Hon. Henry Bonilla, Texas, Chairman
2458 Rayburn House Office Building
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Bonilla:

My organization—Friends of Agricultural Research--Beltsville, Inc.—has forwarded written testimony to the appropriate House or Senate Subcommittees in support of fiscal year 2005 funding for the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland.

Also, we are forwarding our testimony directly to you to request your support for research programs at the Beltsville Agricultural Research Center. **Our statement emphasizes four topics:**

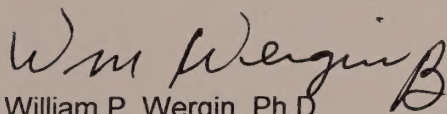
- **Invasive Species—our highest priority recommendation**
- **Continued Support for Congressional Mandates from fiscal years 01 – 04.**
- **BARC – Maryland Technology Development Corporation partnership**
- **Construction funds to complete Phase III of the Beltsville Human Nutrition Research Center.**

In past years, we hand-carried testimony directly to Congressional and Subcommittee offices. Now, owing to security issues and regular mail delays, we are using faxes or electronic delivery to forward our testimony.

We are a private, non-profit organization dedicated solely to promoting USDA's research and educational mission at the Beltsville Agricultural Research Center. We have received neither Federal grants nor contracts at any time.

Thank you for your interest and generous support.

Sincerely,



William P. Wergin, Ph.D
President

Enclosure

FRIENDS OF AGRICULTURAL RESEARCH—BELTSVILLE, INC.
P.O. Box 1061, Beltsville, Maryland 20704-1061

**Testimony for the
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
of the Committee on Appropriations
U. S. House of Representatives**

March 25, 2004

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Maryland. Our organization—**Friends of Agricultural Research--Beltsville**—is dedicated to supporting and promoting the Center's agricultural research, outreach, and educational mission.

Our testimony addresses four central themes.

First, we begin with our highest recommendation for an item within the President's budget—**Identification, Prevention, and Control of Invasive Species.**

Second, we turn to the urgent **need to continue support for specific research areas mandated by the Congress in fiscal years 01, 02, 03, and 04.** These projects address critical research needs that have enormous impact. They have been strongly endorsed and supported by this Subcommittee and many others. We list them below with brief descriptions and our recommendations for continued funding.

Third, we briefly discuss the **BARC and the Maryland Technology Development Corporation (TEDCO) partnership for transferring technology from the laboratory to the marketplace.** We fully support the goals and accomplishments of this special relationship.

Last, we will address our recommendation for construction funds to **complete Phase III of the Beltsville Human Nutrition Research Center**

I. Invasive Species.

The President's budget proposes a **\$2 million increase for invasive species research** at BARC. In our view, the urgency for supporting invasive species research could hardly be overstated. Invasive species—**insects, fungi, nematodes, and animal parasites**—have never posed a greater threat to American agricultural security than they do today.

What's more, the threat is growing, accelerated by rising international travel and immigration, expanding globalization and trade, and the ominous threat of international bioterrorism. Ironically, our nation faces this growing challenge when federal support for invasive species research has reached dangerously low levels after decades of decline. Resources are barely adequate to keep up current programs, much less adequate to cover skyrocketing demands for new research and services. To make matters worse, universities and others have cut back sharply also. The net effect is to leave America weak and vulnerable in an area that urgently needs strengthening.

FRIENDS OF AGRICULTURAL RESEARCH - FARMVILLE, INC.
P.O. Box 1067, Baltimore, Maryland 21201-1067

Testimony for the
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
of the Committee on Appropriations
U.S. House of Representatives

March 25, 1994

Mr. Chairman and Members of the Subcommittee: I am pleased to have the opportunity to present my testimony before you today. I am a member of the Board of Directors of Friends of Agricultural Research - Farmville, Inc. (FARM), a non-profit organization that has been active in the area of agricultural research and development for over 20 years. FARM is a 501(c)(3) organization and is currently a 501(c)(3) organization. Our primary focus is on the development of new agricultural products and technologies that will improve the lives of farmers and consumers alike.

Our first priority is to support the research and development of new agricultural products and technologies that will improve the lives of farmers and consumers alike.

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Our fifth priority is to support the research and development of new agricultural products and technologies that will improve the lives of farmers and consumers alike.

I reserve the right to make any changes to this testimony.

The following is a list of the research and development projects that FARM is currently supporting:

1. Development of new agricultural products and technologies that will improve the lives of farmers and consumers alike.

In November 2002, BARC convened a distinguished panel of scientists and stakeholders, headed by Dr. Peter H. Raven, Director of the Missouri Botanical Garden, to address these issues. They focused basically on the threat of invasive species to agricultural biosecurity, pest management and control, and regulation/quarantine.

The panel noted that BARC houses personnel, collections, and information systems that are unduplicated anywhere in the world. BARC's internationally recognized experts and collections underwrite the scientific basis for the action programs of the Animal and Plant Health Inspection Service, the Forest Service, and state departments of agriculture. BARC experts spend substantial parts of their time identifying alien species that action agencies have intercepted at our ports and borders.

In the concluding remarks of its report, the panel foresees BARC as a national and global leader for protecting the security and productivity of American agriculture against the threat of invasive species. The panel sees BARC as a future center of unparalleled excellence providing the cohesive and responsive knowledge base for protecting U.S. and global agriculture.

The funding increase proposed in the President's budget is a necessary step in the right direction.

II. Congressionally Mandated Programs at BARC

For fiscal years 01 through 04, Congress designated funding for the 14 BARC projects that we briefly describe below. Total funding for these projects was \$7,772,585. We understand that the President's budget for FY-05 proposes to eliminate all 14 projects and replace them with new projects that would receive \$7,575,000 of total funding. Though the net difference of total proposed funding is relatively small, the impact on vital research would be dramatic.

In our view, the 14 on-going projects should be funded to completion before new projects are added to the BARC portfolio. We would also point out that there is no simple way to re-assign scientists from the on-going projects to the proposed new projects, which are considerably different in emphasis and required scientific skills. We strongly recommend continued funding for the projects listed below.

Animal Improvement Programs Laboratory: For many years America's dairy cows have steadily increased milk production at the rate of about 45 gallons per year. Approximately two-thirds of those increases can be traced to genetic progress. Much of the credit for that success stems from the **cooperative national and international genetic evaluation programs of BARC's Animal Improvement Programs Laboratory**. The future of dairy industry will be greatly influenced by the research of the Animal Improvement Programs Laboratory. In recent years, the Laboratory staff has decreased because inflation and salary increases have consumed operating funds. We recommend continued funding support for the Laboratory.

Barley Health Foods Research: Barley contains carbohydrates called beta-glucans that help control blood sugar and cholesterol. **We recommend continued support for research to determine if barley-containing foods may affect the risks of such chronic conditions as cardiovascular disease, obesity, and diabetes.** This research is needed to assess the bioavailability and efficacy of food components found in barley and to identify foods, health practices, and attitudes associated with successful maintenance of weight loss. We recommend continuation of this funding.

Biominerall Soil Amendments for Nematode Control: Losses to soil nematodes cost farmers billions every year. The soybean cyst nematode alone can cut soybean yields by 30 percent, often more. Citrus and vegetable crops also are vulnerable to intensive nematode damage. Growers are squeezed by expanding nematode infestations, nematicide resistance, and de-registration of traditional nematicides because of environmental concerns. **BARC in cooperation with industry and others is pursuing new, more effective approaches to nematode control.**

Promising research lines include using such re-cyclable soil amendments as animal wastes, composts, and mineral by-products. We recommend continuing the increased funding for these promising approaches.

Foundry Sand By-Products Utilization: Municipalities and industries generate vast quantities of by-products. **By-products, such as foundry sand from the metal castings industry, have potential uses in agricultural and horticultural production processes.** The **Animal Manure and By-Products Laboratory** will use the funding to identify beneficial new uses and assess risks to human health, safety, or the environment from using foundry sand in agriculture. We recommend continuation of this funding.

Poultry Diseases: The mission of the Parasite Biology, Epidemiology, and Systematics Laboratory is to **reduce the economic costs of parasites in livestock and poultry.** Coccidiosis causes the greatest economic loss to the chicken meat industry from disease. But traditional chemical controls are becoming ineffective. New non-chemical control methods are needed. Funding will be used to conduct functional genomics and proteomics analysis of coccidia to identify potential proteins that can be used in diagnostic tests and as targets for potential vaccine development. We recommend continuation of this funding.

Biomedical Plant Materials: There is a **growing need for functionally active, protective molecules for human and animal pathogens.** We need them at lower cost and without risk to humans, animals, or the environment. Such agents include recombinant antibodies, vaccines, and enzymes. Also, we need non-contaminated, lower-cost, more reliable diagnostic reagents.

In recent years, scientists have produced biomedical reagents from plants in the laboratory. The potential benefits are huge. **For one example, replacing costly poultry vaccine injections with edible plant-produced vaccines would substantially lower poultry production costs.** Beltsville is uniquely equipped to develop necessary systems and to test their efficacy in cooperation with other ARS facilities working on livestock and poultry diseases. This is a cooperative project with the Biotechnology Foundation, Inc., in Philadelphia. We recommend continuation of this funding.

National Germplasm Resources System: This laboratory supports the national database that provides data storage and retrieval systems for collecting and disseminating germplasm information. It provides accurate taxonomy, transport, geographic evaluation, inventory, and cooperator information for plant and animal germplasm holdings nationwide. **This is an ARS mission-critical activity.** We recommend continuation of funding.

Bovine Genetics: Somatic cell nuclear transfer (cloning) technology has tremendous biomedical and agricultural potential. Yet the frequency of successful births from cloning has been relatively low. Many pregnancies fail before completing gestation. **Funding will support collaborative research by the Gene Evaluation and Mapping Laboratory, the University of Illinois, and the University of Connecticut aimed at improving cloning efficiency.** We recommend continuation of this funding.

IR-4: Registration of Minor Use Pesticides: "Minor crops" have great economic value, but are not among the top ten crops like corn and soybeans that provide huge markets for pesticide manufacturers. **Manufacturers often do not see a large enough market to justify the expense of doing the research needed to register a pesticide for a "minor crop."** Without the IR-4 program, growers would have fewer options for pest control. The Beltsville **Environmental Quality Laboratory** operates a minor crop pesticide residue laboratory. This lab vigorously enforces EPA-prescribed protocols for all experimental procedures, and prepares comprehensive final reports. New funds enhance the overall mission of the Agency's IR-4 program. We recommend that this funding be continued.

First, the Commission has been asked to consider the possibility of a new approach to the management of the common fisheries policy. The Commission has been asked to consider the possibility of a new approach to the management of the common fisheries policy.

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Nutrition monitoring system: BARC's Food Survey Research Group monitors food and nutrient intake for the nation in collaboration with HHS and the NHANES study (National Health and Nutrition Examination Survey). We recommend continuation of this funding.

The approximate \$500,000 of new money will enable the collection of a second day of dietary intake data from human subjects. This information is critical for increasing the statistical reliability of the food intake survey data. These data are important for supporting such public policy programs as school lunch, food stamps, WIC, senior meals programs, etc. **They are also important when the Institute of Medicine's Food and Nutrition Board (part of NAS) sets recommended intakes for essential nutrients.** We recommend continuation of this funding.

Coffee and Cocoa: These funds support research to control a range of **fungal diseases and pests that attack coffee and cacao (chocolate).** More profitable production systems for these crops will make them more **attractive alternatives to some producers of coca (cocaine).** We recommend continuation of this funding.

Johne's Disease: This disease is also called bovine paratuberculosis. It is a contagious disease that **causes chronic wasting or debilitating enteritis and eventual death in cattle, sheep, goats, deer, and other wild and domestic ruminants.** Infected animals intermittently shed the microorganism into milk and feces. The research at BARC will provide a better understanding of the **pathogenicity of the organism so that better diagnostic tests and vaccines** can be developed. We recommend continuation of this funding.

Food Safety: This is funding for **studying transmission of Listeria, a human pathogen and food safety contaminant.** Certain cheeses, including some popular French imports, are made from fresh unpasteurized milk, and can carry Listeria. Listeria can make anybody sick, but **it's a particular risk for pregnant women because it can cause miscarriage or other problems.** We recommend continuation of this funding.

Weed Management: These funds support a **cooperative project with Rodale Institute on weed management in organic farming.** Organic farming is a very rapidly growing sector of agriculture, and organic foods often command a price premium. Organic farming makes it possible for **small farmers to make a living with high-value products** from a small piece of land. Weeds are one of the biggest problems encountered by organic farmers, and a serious threat to their economic viability. These research funds will improve non-chemical weed control.

III. BARC – TEDCO Partnership

The Maryland Technology Development Corporation (TEDCO) and BARC have created a **partnership to speed the transfer and commercialization of technologies from BARC laboratories to the private sector.** Goals include fostering new industries, creating or revitalizing businesses, stimulating economic growth, and creating new, stable jobs.

We understand that **TEDCO has approached the Congress regarding a \$1 million appropriation to support technology transfer.** The funds are needed to continue on-going BARC - TEDCO technology transfer activities. **Approximately one half of the appropriation would be made available to BARC laboratories to complete research needed to commercialize new, valued-added products made from poultry feathers.**

Potential economic and environmental benefits from the successful commercialization of products made from poultry feathers are substantial, not only for Maryland but well beyond. Environmentally, finding an economic outlet for waste poultry feathers would relieve the tremendous burden of disposing an unusable material. Economically, **estimates predict that as many as 80 new poultry-feather plants, each generating 80-100 new jobs, could be created**

FAR-B heartily endorses support for this innovative approach to technology transfer and commercialization.

IV. Buildings and Facilities

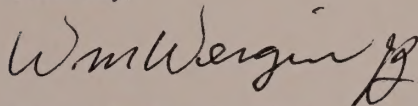
Phases I and II of the three-planned phases of construction and modernization for the Beltsville Human Nutrition Research Center have been completed. Phases I and II provided for constructing two new buildings for human nutrition research. The new buildings are now fully functional and are contributing to the research mission of the Beltsville Human Nutrition Research Center. They were officially opened last August in a dedication ceremony at BARC. With the opening of these buildings, BARC now has the largest capacity for free-living volunteer studies in the United States.

Phase III is for renovating the original human nutrition building, which after almost seven decades of heavy use is in poor condition. Its interior badly needs modernization. Externally, the building remains generally sound. BARC is committed to preserving the building's historical exterior and appearance. **Once renovated, the building will house the Food Composition Lab, the Nutrient Data Lab, the Food Surveys Research Group, and the Community Nutrition Research Group—all research.** BARC then will have all of the BHRNC staff in one complex of buildings, all modern and meeting current needs and building standards.

In fiscal year 2001, Congress provided \$1.9 million to design the building's interior renovation. **Though the design work is about 35 percent complete, the process is on hold pending approval of \$26 million needed for construction.** BARC may not begin construction before all of the construction funding has been approved. Should Congress approve partial construction funding for fiscal year 2005, BARC will hold the partial funding until full funding may be approved in a later appropriation. We commend BARC's flexibility regarding the renovation project, and we encourage Congress to approve funding for Phase III.

Mr. Chairman, that concludes our statement. We again thank you for the opportunity to present our testimony and for your generous support.

Sincerely,



William P. Wergin, Ph.D.
President

1975-76 biennial report on the activities of the Department of Health and Social Security

IV. Buildings and Facilities

Paragraphs 1 and 2 of the Department's annual report on the activities of the Department of Health and Social Security for the year 1975-76, and paragraph 3 of the annual report for the year 1976-77, contain information on the progress of the Department's programme of building and facilities. The Department has been successful in securing the necessary resources to enable it to carry out its programme of building and facilities. The Department has been successful in securing the necessary resources to enable it to carry out its programme of building and facilities. The Department has been successful in securing the necessary resources to enable it to carry out its programme of building and facilities.

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William F. Wooten, Jr.
Director

**FRIENDS OF AGRICULTURAL RESEARCH--BELTSVILLE (FAR--B)
P.O. BOX 1061
BELTSVILLE, MARYLAND 20705-1061**

*Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland*

**Testimony for the
Subcommittee on Agriculture, Rural Development and Related Agencies
Committee on Appropriations
United States Senate**

Date 2009

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement regarding funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland.** Our organization--**Friends of Agricultural Research--Beltsville**—promotes the Center's current and long-term agricultural research, outreach, and educational missions.

Before going to the heart of our testimony, please allow us to note for the record that during FY-2010 the Beltsville Agricultural Research Center will mark a great historical milestone, a milestone to celebrate the many great and small accomplishments that BARC research has contributed to the nation's agricultural bounty and to the overall march of scientific progress. **A full century will have passed since 1910, the year Beltsville research began with the assembly of a dairy cattle herd for research purposes. The ensuing BARC story is by all rights a national story—a story of world-class accomplishment.** BARC Director Joseph Spence and his staff are planning a series of worthy events to commemorate the centennial year.

The Friends of Agricultural Research--Beltsville (FAR--B) is honored to be both a participant in the centennial planning process and a contributor to coming events. We would be pleased, Mr. Chairman, **to answer any questions, to collect any information or citations the Subcommittee might wish regarding the centennial or our testimony.**

We now turn to the specifics of our testimony for FY-2010:

Under-funded salary growth.

First, we appreciate the restoration of items that were recommended for termination in the president's proposed budget for FY-09. While we are led to believe that there are no proposed terminations that affect Beltsville in the FY-10 budget, we also understand that there are no proposed funding increases. Unfortunately, the net result is a reduction in funds available for research. One unfortunate result of the recent increase in Federal

TESTIMONY OF AGRICULTURAL RESEARCH-DEVELOPMENT (CARD-B)
P.O. BOX 1041
BELLVILLE, MARYLAND 21111-1041

Submitted to the Secretary of Agriculture and Education, Division of the Office of the Secretary
Baltimore Agricultural Research Center, Baltimore, Maryland

Testimony for the
Subcommittee on Agricultural Research, Development and Policy, Agriculture
Committee on Agriculture
United States Senate

Date: 1981

Mr. Chairman and Members of the subcommittee, thank you for the opportunity to present my testimony regarding the importance of agricultural research and development. I am particularly pleased to be here today to discuss the work of the Agricultural Research Service (ARS), and especially the work of the Agricultural Research Station in Beltsville, Maryland. The Agricultural Research Station in Beltsville is a unique facility that provides a wide range of research and development services to the agricultural community.

During the past few years, the station has been able to provide a wide range of research and development services to the agricultural community. This has been made possible by the station's unique facilities, which include a wide range of research and development services. The station's research and development services are designed to meet the needs of the agricultural community, and to provide a wide range of research and development services to the agricultural community. The station's research and development services are designed to meet the needs of the agricultural community, and to provide a wide range of research and development services to the agricultural community.

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We now turn to the specific testimony for FY 1981.

Summary of Testimony

During the past few years, the station has been able to provide a wide range of research and development services to the agricultural community. This has been made possible by the station's unique facilities, which include a wide range of research and development services. The station's research and development services are designed to meet the needs of the agricultural community, and to provide a wide range of research and development services to the agricultural community. The station's research and development services are designed to meet the needs of the agricultural community, and to provide a wide range of research and development services to the agricultural community.

salaries, in the absence of offsetting funding increases, creates negative growth in funding available for research. This situation has continued for several years now, and it has had a significant negative impact on ARS research.

FAR-B strongly recommends funding adjustments to offset the almost yearly decline of net research funding resulting from under-funded salary increases.

Facilities.

With talk of greatly increased expenditures of the Federal government for facilities projects that are “shovel-ready”, it is our hope that the Beltsville Area will be the recipient of a significant amount of those funds. Several projects at BARC are fully designed and ready for construction to begin almost immediately. These include the final phase of construction of the Beltsville Human Nutrition Research Center (BHNRC), in which existing building 307 will be gutted and rebuilt. This will allow BARC to relocate the entire BHNRC--now spread out at three separate locations--to one location and also free up space for other needed research activities. The completion of this important building renovation is urgently needed at BARC because many of the proposed space consolidations that will greatly reduce the operating costs at the Center are dependent on this project.

Other projects that are fully designed and ready to go include three projects at the U.S. National Arboretum (USNA). The relocation of the USNA entrances from R Street and New York Avenue to Bladensburg Road is a major project that needs to move forward and will greatly improve public access while relieving traffic congestion on New York Avenue. Finally, the trash abatement project for the clean up of Hickey Run needs to move forward. Rain run off produces a great volume of trash as the result of inadequate storm water control by the District of Columbia. This trash accumulates on the property of the USNA. This project is urgently needed to prevent trash from washing onto the arboretum grounds, which now occurs with almost any significant rainfall. This project is also critically importance environmentally and for helping clean up the Anacostia River. The project has been completely designed and, while funds have been appropriated to the DC government and to ARS for this project, funding is not adequate to start construction on this project.

FAR-B strongly recommends funding to complete these long delayed, urgently needed improvements.

Research Initiatives.

While the budget does not identify new research initiatives for BARC, there are many areas of research that BARC is uniquely situated to conduct. They present compelling opportunities to reward agriculture, the environment, and the consumer.

Food Safety – The Beltsville Area recently established the largest single food safety unit in ARS. This research unit will focus on a number of issues, including safety of fruits

and vegetables and food safety issues related to organic agriculture. The ability exists at BARC to raise crops and animals under farm conditions, and then to process, store, and package the resulting products. The ability to propose and test interventions that greatly reduce pathogen exposure in foods, and ultimately in people, is a unique feature of the food safety research program at BARC.

Genomic Prediction – The promise of understanding the genome of plants and animals is being fully exploited at Beltsville. In groundbreaking research conducted here, scientists have been able to quickly and accurately identify dairy cows that are the most efficient milk producers. Now a simple test at birth can predict at twice the accuracy and at a cost of about \$250 the potential of a bull to sire high producing cows. Traditionally, bull prediction methods have required farmers to maintain and study cows for several years, at a cost up to \$50,000. The potential for developing and expanding this breakout technology is huge and at great savings to farmer and consumer alike.

Climate Change – BARC has truly unique growth chambers that can measure and observe plant growth at every stage from root to stem, and under every conceivable atmospheric condition. BARC is using these chambers to measure the effects of increasing atmospheric CO₂ and changes in environmental temperatures. Studies are underway not only on agronomically important crops, but also on invasive weeds. Research shows that environmental changes may enhance the rapid growth of invasive plants, thus threatening to exacerbate already costly problems for American agriculture.

Obesity Prevention – Obesity negatively impacts the health and productivity of the American public. More, obesity comes with greatly increased risk of chronic diseases that dramatically add to the economic costs of health care. The Beltsville Human Nutrition Research Center (BHNRC) is researching barriers and facilitators to help the American public follow Federal dietary guidelines. A major research emphasis is to prevent obesity through a better understanding of why people make the food choices they do. This research also will help USDA design and implement more effective food assistance programs.

Waste Utilization – Because it is a working farm and has research scientists who have expertise in animal science, conversion technologies, and environmental science, BARC is an ideal place to study the utilization of farm generated waste products. Farm-generated waste products can be environmentally harmful, have little or no value to the farmer, and be costly to dispose of. Work at Beltsville has led to the effective development of technologies and products that take waste by-products and convert them to valuable new products. Examples include biofuels and plastics made without petroleum.

Trade Enhancement and Global Competitiveness – BARC maintains and expands the Federal government's unique collections of materials and organisms that are of utmost importance in identifying pests and for ensuring that unwanted pests are prevented from entering the U.S. and producing destruction of animals and plants of economic importance. These unique and irreplaceable collections include the Germplasm Resource

Information Network, and invaluable reference collections of insects, nematodes, parasites, and fungi. These world-class collections attract leading experts from around the world who study and use them for their own purposes. The collections are absolutely critical to identifying and preventing exotic pest problems from entering the United States through imports or by international travelers as well as demonstrating that our exports are safe. The continued availability of research in this general area of systematics is essential for trade, for homeland security, and protecting American agriculture.

Chesapeake Bay Improvement – BARC scientists are working with farmers on Maryland's Eastern Shore to learn how to improve on-farm conservation practices that will improve water quality in the Chesapeake Bay. The research goals—targeting the entire range of Eastern Shore farming practices—include reducing fertilizer and pesticide usage. A central goal is to create agronomic and animal waste management practices that will reduce fertilizer usage and control pollution runoff. Biocontrol studies are searching out ways to minimize the need for pesticides. Scientists also are using advanced remote sensing and hydrological technologies to protect the health of the Chesapeake watershed.

FAR-B strongly recommends continued funding for this high-value, critically needed research.

Mr. Chairman, that concludes our statement. We again thank you for the opportunity to present our testimony and for your interest and support.

Sincerely,

Vernon Pursel, Ph.D.
President

(Draft date: March 5, 2009; includes Joe Spence' editorial comments)



FRIENDS OF AGRICULTURAL RESEARCH—BELTSVILLE (FAR—B)

P.O. BOX 1061

BELTSVILLE, MARYLAND 20705-1061

*Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace Beltsville
Agricultural Research Center, Beltsville, Maryland*

Date

The Hon. XX
Xxx Xx House Office Building
U.S. House of Representatives
Washington, D.C. 20515-2008

Dear Congressman XX:

My organization—Friends of Agricultural Research--Beltsville, Inc.—has forwarded written testimony to the House and Senate Subcommittees on agricultural appropriations in support of FY- 2010 funding for the Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland. We are forwarding our testimony to you also to request your support for the research programs at the Beltsville Agricultural Research Center.

During FY-2010, the Beltsville Agricultural Research Center will mark a historical milestone. A century will have passed since 1910, the year Beltsville research began. The ensuing BARC story is by all rights a national story—a story of world-class accomplishment. BARC Director Joseph Spence and his staff are planning a series of commemorative events. Our organization will participate in and support those events. We would be pleased to answer any questions, to collect any information regarding the centennial or our testimony.

Our testimony emphasizes these themes:

Under-funded salary growth leading to a reduction in net research funding.

Facilities, “shovel-ready”, urgently needed construction projects, among them the final phase of the Beltsville Human Nutrition Research Center (BHNRC) and three projects at the U.S. National Arboretum (USNA).

Research Initiatives, BARC is uniquely situated to lead compelling research initiatives leading to high returns for agriculture, the environment, and American farmers and consumers.

We are a private, non-profit organization dedicated to promoting USDA's research and educational mission at the Beltsville Agricultural Research Center. We receive neither Federal grants nor contracts.

Thank you for your consideration and support.

Sincerely,

Vernon Pursel, PhD
President

Enclosure



FRIENDS OF AGRICULTURAL RESEARCH – BELTSVILLE, INC. (FAR-B)

P. O. Box 1061

Beltsville, MD 20704-1061

<http://www.far-b.org>

**Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland**

**Testimony for the
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
Committee on Appropriations
U. S. House of Representatives**

**Submitted by Vernon G. Pursel, President, Friends of Agricultural Research – Beltsville
on April 21, 2009**

Madam Chair, and Members of the Subcommittee, thank you for this opportunity to present our statement regarding funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland.** Our organization - **Friends of Agricultural Research - Beltsville**—promotes the Center's current and long-term agricultural research, outreach, and educational missions.

Before going to the heart of our testimony, please allow us to note for the record that during FY-2010 the Beltsville Agricultural Research Center will mark a great historical milestone, a milestone to celebrate the many great and small accomplishments that BARC research has contributed to the nation's agricultural bounty and to the overall march of scientific progress. **A full century will have passed since 1910, the year research in Beltsville began with the assembly of a dairy cattle herd for research purposes. The ensuing BARC story is by all rights a national story - a story of world-class accomplishment.** BARC Director Joseph Spence and his staff are planning a series of worthy events to commemorate the centennial year.

The Friends of Agricultural Research-Beltsville (FAR-B) is honored to be both a participant in the centennial planning process and a contributor to coming events. We would be pleased, Madam Chair, **to answer any questions, to collect any information or citations the Subcommittee might wish regarding the centennial or our testimony.**

We now turn to the specifics of our testimony for FY-2010:

Under-Funded Salary Growth. \$1,700,000.

First, we appreciate the restoration of items that were recommended for termination in the president's proposed budget for FY-09. We would hope that the FY-10 budget does not identify additional program terminations at BARC, and we would hope that there will be much needed funding increases. In the FY-09 budget, there was only about half of the needed funding for

salary increases that went into effect at the beginning of the year. An unfortunate result of recent annual increases in Federal salaries - without offsetting funding increases— is a negative growth in funding available for discretionary spending on research. This situation has continued for several years now, and it has had a significant negative impact on ARS research.

FAR-B strongly recommends funding adjustments to offset the almost yearly decline of net research funding resulting from under-funded salary increases.

Research Initiatives.

While it is unclear at this time if the FY-10 budget includes funding for additional research at BARC, it is important to point out that BARC conducts many areas of research and that the research is of the highest national priority. BARC research presents many compelling opportunities to reward agriculture, the environment, and the consumer.

Food Safety – \$500,000.

The Beltsville Area recently established the largest single food safety unit in ARS. This research unit will focus on a number of issues, including safety of fruits and vegetables and food safety issues related to organic agriculture. The ability exists at BARC to raise crops and animals under farm conditions, and then to process, store, and package the resulting products. A unique feature of the food safety research program at BARC is the ability to propose and test interventions that greatly reduce pathogen exposure in foods, and ultimately in people.

Genomic Prediction – \$1,500,000.

The promise of understanding the genome of plants and animals is being fully exploited at Beltsville. In groundbreaking research conducted here, scientists have been able to quickly and accurately identify dairy bulls that will produce daughters capable of producing the most milk. Now a simple test at birth can predict at twice the accuracy and at a cost of about \$250 the potential of a bull to sire high producing cows. Traditionally, bull prediction methods have required farmers to obtain production records of 50 to 100 daughters per bull to determine his genetic merit, at a cost up to \$50,000 per bull. The potential for developing and expanding this breakout technology is huge and at great savings to dairy farmers and consumers alike.

Climate Change – \$1,500,000.

BARC has truly unique growth chambers that can measure and observe plant growth at every stage from root to stem, and under every conceivable atmospheric condition. BARC is using these chambers to measure the effects of increasing atmospheric CO₂ and changes in environmental temperatures. Studies are underway not only on agronomically important crops, but also on invasive weeds. Research shows that environmental changes may enhance the rapid growth of invasive plants, thus threatening to exacerbate already costly problems for American agriculture.

Obesity Prevention – \$500,000.

Obesity negatively impacts the health and productivity of the American public. Moreover, obesity comes with greatly increased risk of chronic diseases that dramatically add to the

economic costs of health care. The Beltsville Human Nutrition Research Center (BHNRC) is researching barriers and facilitators to help the American public follow Federal dietary guidelines. A major research emphasis is to prevent obesity through a better understanding of why people make the food choices they do. This research also will help USDA design and implement more effective food assistance programs.

Waste Utilization – \$1,000,000.

Because it is a working farm and has research scientists who have expertise in animal science, conversion technologies, and environmental science, BARC is an ideal place to study the utilization of farm-generated waste products. Farm-generated waste products can be environmentally harmful, have little or no value to the farmer, and disposal can be costly. Work at Beltsville has led to the effective development of technologies and products that take waste by-products and convert them to valuable new products. Examples include biofuels and plastics made without petroleum.

Trade Enhancement and Global Competitiveness – \$2,000,000.

BARC maintains and expands the Federal government's unique collections of materials and organisms that are of utmost importance in identifying pests and for ensuring that unwanted pests are prevented from entering the U.S. and producing destruction of animals and plants of economic importance. These unique and irreplaceable collections include the Germplasm Resource Information Network, and invaluable reference collections of insects, nematodes, parasites, and fungi. These world-class collections attract leading experts from around the world who study and use them for their own purposes. The collections are absolutely critical to identifying and preventing exotic pest problems from entering the United States through imports or by international travelers as well as demonstrating that our exports are safe. The continued availability of research in this general area of systematics is essential for trade, for homeland security, and for the protection of American agriculture.

Chesapeake Bay Improvement – \$500,000.

BARC scientists are working with farmers on Maryland's Eastern Shore to learn how to improve on-farm conservation practices that will improve water quality in the Chesapeake Bay. The research goals—targeting the entire range of Eastern Shore farming practices—include reducing fertilizer and pesticide usage. A central goal is to create agronomic and animal waste management practices that will reduce fertilizer usage and control pollution runoff. Biocontrol studies are searching out ways to minimize the need for pesticides. Scientists also are using advanced remote sensing and hydrological technologies to protect the health of the Chesapeake watershed.

FAR-B strongly recommends continued funding for these high-value, critically needed research initiatives.

Facilities. \$30 Million.

Ongoing facility needs at BARC are a reflection of the age of many of the buildings and infrastructure at BARC. As the program and the number of employees has decreased over time

due to lack of funding, the timing of establishing a large research facility has taken its toll in terms of research and ongoing maintenance. It is essential that additional funding be provided for general facility maintenance and that the facility consultation group be formed. With the aid of grants, investment expenditures of the Federal Government for facilities projects that are "short-term", it is our hope that the Hatcher Area will be the recipient of a significant amount of those funds. Several projects at HARC are fully designed and ready for construction to begin almost immediately. These include the first phase of construction of the Hatcher House (HARC House) in which existing building 307 will be pulled and rebuilt. This will allow HARC to relocate the entire HARC - now spread out in four separate buildings - to one location and also free up space for other needed research facilities. The completion of this important building renovation is urgently needed at HARC because many of the proposed space considerations, which will greatly reduce the operating costs at the Center, are dependent on this project.

Other projects that are fully designed and ready to go include three projects at the U.S. National Academy (USNA). The renovation of the USNA entrance from H Street and New York Avenue to Independence Road is a major project that needs to move forward and will greatly improve public access while reducing traffic congestion on New York Avenue. Finally, the first apartment project for the cleanup of Hickey has needs to move forward. When runoff produces a great volume of wash as the result of impervious storm water runoff by the District of Columbia, this wash accumulates on the property of the USNA. This project is urgently needed to prevent fresh rain washdown onto the adjacent grounds, which now occurs with almost any significant rainfall. This project is also critically important for environmental and for helping clean up the Anacostia River. The project has been completely designed and while funds have been appropriated to the D.C. government and to ARS for this project, funding is not adequate to start construction on this project.

EAR is strongly recommending funding to complete these long delayed, urgently needed facility improvements.

Respectfully,
We again thank you for the opportunity to present our vision and our future and suggest.

Very truly yours,
[Signature]
[Name]
[Title]
[Address]
[Phone]
[Fax]
[Email]
[Web]
[Other Contact Info]

FRIENDS OF AGRICULTURAL RESEARCH—BELTSVILLE, INC.
P.O. Box 1061, Beltsville, Maryland 20704-1061

**Testimony for the
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
of the Committee on Appropriations
U. S. House of Representatives**

March 15, 2002

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Maryland. Our organization—**Friends of Agricultural Research—Beltsville**—is dedicated to supporting and promoting the Center's agricultural research, outreach, and educational mission.

Mr. Chairman, we know these are difficult times for the federal budgetary process. The unspeakable acts of September 11 and their aftermath join with a slower economy to create complications for FY-03 appropriations. Yet the case for maintaining essential agricultural research must be made, and defended. This is our purpose: to add voice to the recommendations of our finest agricultural researchers and managers. Producers, processors, transporters, marketers, agribusinesses will be the beneficiaries. Ultimately, the big winner will be the American consumer.

With that, we turn to our specific recommendations. Though we don't propose to present our recommendations in any particular order of importance, we will begin our specific comments with a solid recommendation to keep Beltsville's Bee Research Laboratory in Beltsville.

Beltsville Bee Research Laboratory

Just as the Beltsville Agricultural Research Center is the flagship agricultural research facility to the nation and the world, the **Beltsville Bee Research Laboratory** is the flagship bee research facility to the nation and the world. The Beltsville location is not only a boon to honey bee research, but to all of production agriculture. The nation's oldest Federal bee research facility, the Laboratory and its predecessors in the Washington area have existed for over 100 years. Generally considered the world's premier bee disease laboratory, the Beltsville laboratory provides bee disease, parasitic mite, and Africanized honey bee identification services for beekeepers worldwide. It also supports the mission of other Federal agencies, including the Animal and Plant Health Inspection Service, the Environmental Protection Agency, and the Food and Drug Administration. Moreover, the Bee Research Laboratory provides training for bee disease diagnosticians from other states and countries including Mexico, Canada, the United Kingdom, South Africa, New Zealand, Pakistan, Chile, and others.

I. Barton Smith of the Maryland Department of Agriculture recently described the need for the Beltsville Laboratory this way: "The beekeeping industry is in dire need of the work...due to problems with resistant mites and foulbrood. The Beltsville Bee Research Lab provides bee disease and pest diagnosis to state regulatory agencies and beekeepers. Last year, that lab

diagnosed 96 bee disease samples for the Maryland Department of Agriculture (MDA). The MDA does not have the expertise to do this work."

A recent Cornell University study estimated the value of increased agricultural production attributable to honey bee pollination at \$14.6 billion annually. This value comes from increased crop yields and superior quality. Between 1993 and 1997, numbers of bee colonies and yield of honey per U.S. colony declined sharply. A 1998 report pointed out that a quarter of North America's wild and domesticated honey bees had disappeared over the previous eight years at a cost to American farmers of \$5.7 billion a year. Managed bee colonies and their pollination benefits will survive only if these trends can be reversed, according to the report.

Full-scale honey bee research of this quality can't stand in isolation. The Beltsville location provides research cooperation that is unavailable anywhere else. Bee research requires the expertise not only of apiculturists, but of pathologists, geneticists, and chemists. Beltsville provides all these and more. For example, the Beltsville Bee Lab is the only laboratory committed to preserving honey bee germplasm. It is uniquely positioned to take advantage of the avian and porcine germplasm research being conducted at Beltsville. This type of cooperative research allows research groups to meet daily if needed and it provides the savings of shared instrumentation. Also, the lab spearheads the USDA effort seeking FDA approval for two antibiotics to control American foulbrood disease of honey bees. The causative bacterium is showing resistance to the only approved antibiotic, and is devastating bee colonies across the nation. The Beltsville Bee Lab has developed new controls for parasitic mites, including an ARS-patented gel formulation of formic acid. The commercially available, environmentally friendly product offers a 90-100 per cent control. Nowhere in the country is a federal bee laboratory located in the close proximity to such prestigious institutions as the National Institutes of Health, Johns Hopkins University, the University of Maryland, Georgetown University, and the Smithsonian Institution.

The Beltsville Bee Laboratory is the only federal honey bee research facility located in a climate representative of the majority of U.S. beekeeping areas. **Honey bee experts from the Mid-Atlantic Region say that a sustained base of research support would be lost if the Beltsville Laboratory were to be re-located to Weslaco, Texas.** Within a 400 miles radius of Beltsville, growers use honey bees to pollinate major acreages of crops such as apples, blueberries, and cranberries. Those crops are unavailable for pollination studies in the arid Southwest. Further, migratory beekeeping is a vital management practice near Beltsville, where honey bee colonies are moved up and down the eastern agricultural corridor.

Feral Africanized honey bees dominate Weslaco's arid Southwestern location. By no means do we diminish the importance of Africanized honey bees to the six states where they have been reported. **Still, scientists say that Weslaco's atypical honey bee situation is ill-suited for traditional European honey bee research.** They say traditional honey bee research at Weslaco would be both highly impractical and extremely costly. Also, we would note that several state universities are cutting back on honey bee research. The net effect overall is to cut honey bee research to the bone when more, not less, research is badly needed. Thus, for many reasons, we respectfully recommend keeping the Beltsville Bee Research Laboratory intact. **This is not the time to cut bee research at Beltsville.**

Animal Improvement Programs Laboratory

This venerable Beltsville laboratory and its predecessors have contributed over a century of steady genetic progress to America's milk production industry. Its reach is worldwide, helping producers everywhere make better informed genetic decisions and promoting export of American germplasm and breeding stock.

For many years America's dairy cows have steadily increased milk production at the rate of about 45 gallons per year. Approximately two-thirds of those increases can be traced to genetic

progress. Much of the credit for that success stems from the cooperative national and international genetic evaluation programs of BARC's award winning **Animal Improvement Programs Laboratory**. The future of dairy industry will be greatly influenced by the research of the Animal Improvement Programs Laboratory. In recent years, the Laboratory staff has decreased as inflation and salary increases have eaten away at operating funds. **Without additional funding, the lab will be so strapped for funds it will be unable to function.** With the requested funding, the lab can support the current program and expand it by hiring another Research Geneticist. We recommend continued funding support for the Laboratory.

Barley Health Foods Research

Barley contains carbohydrates called beta-glucans that help control blood sugar and cholesterol. **We recommend continued support for research to determine if barley-containing foods may affect the risks of such chronic conditions as cardiovascular disease, diabetes, and obesity.** This research is needed to assess the bioavailability and efficacy of food components found in barley and to identify foods, health practices, and attitudes associated with successful maintenance of weight loss.

Biomining Soil Amendments for Nematode Control.

Losses to soil nematodes cost farmers billions every year. The soybean cyst nematode alone can cut soybean yields by 10 percent, often more. Citrus and vegetable crops also are vulnerable to intensive nematode damage. Growers are squeezed by expanding nematode infestations, nematicide resistance, and de-registration of traditional nematicides because of environmental concerns. **BARC in cooperation with industry and others is pursuing new, more effective approaches to nematode control. Promising research lines include using such re-cyclable soil amendment as animal wastes, composts, and mineral by-products.** We recommend continuing the increased funding for these promising approaches.

Foundry Sand By-Products Utilization

Municipalities and industries generate vast quantities of by-products. **By-products, such as foundry sand from the metal castings industry, have potential uses in agricultural and horticultural production processes.** The Animal Manure and By-Products Laboratory will use the funding to identify beneficial new uses and assess risks to human health, safety, or the environment from using foundry sand in agriculture. A new soil scientist will be hired to support this work. We recommend continuation of this funding.

Poultry Diseases

The mission of the **Parasite Biology, Epidemiology, and Systematics Laboratory** is to reduce the economic costs of parasites in livestock and poultry. **Coccidiosis causes the greatest economic loss to the meat chicken industry from disease.** But traditional chemical controls are becoming ineffective; and new non-chemical control methods are needed. New funding will be used to conduct functional genomics and proteomics analysis of coccidia to identify potential proteins that can be used in diagnostic tests and as targets for potential vaccine development. We recommend continuation of this funding.

Biomedical Plant Materials

There is a growing need for functionally active, protective molecules for human and animal pathogens. We need them at lower cost and without risk to humans, animals, or the environment. Such molecules include recombinant antibodies, vaccines, and enzymes. Also, we need non-contaminated, lower-cost, more reliable diagnostic reagents.

In recent years, scientists have produced biomedical reagents from plants in the laboratory. The potential benefits are huge. **For one example, replacing poultry vaccine injections with edible plant-produced vaccines would substantially lower poultry production costs.** Beltsville is uniquely equipped to develop necessary systems and to test their efficacy in cooperation with other ARS facilities working on livestock and poultry diseases. This is a cooperative project with the Biotechnology Foundation, Inc., in Philadelphia. We recommend continuation of this funding.

National Germplasm Resources System

This laboratory supports the national database that provides data storage and retrieval systems for collecting and disseminating germplasm information. It provides accurate taxonomy, transport, geographic, evaluation, inventory, and cooperator information for plant and animal germplasm holdings nationwide. **This is an ARS mission-critical activity.** We recommend continuation of funding.

Bovine Genetics

Somatic cell nuclear transfer (cloning) technology has tremendous biomedical and agricultural potential. Yet the frequency of successful births from cloning has been relatively low. Many pregnancies fail before completing gestation. **New funding will support collaborative research by the Gene Evaluation and Mapping Laboratory and the University of Illinois aimed at improving cloning efficiency.** A new Molecular Biologist is being hired to support this effort. We recommend continuation of this funding.

IR-4: Registration of Minor Use Pesticides

"Minor crops" have great economic value, but are not among the top ten crops like corn and soybeans that provide huge markets for pesticide manufacturers. **Manufacturers often do not see a large enough market to justify the expense of doing the research needed to register a pesticide for a "minor crop."** Without the IR-4 program, growers would have fewer options for pest control. The Beltsville **Environmental Quality Laboratory** operates a minor crop pesticide residue laboratory. This lab vigorously enforces EPA-prescribed protocols for all experimental procedures, and prepares comprehensive final reports. New funds enhance the overall mission of the Agency's IR-4 program. We recommend that this funding be continued.

Invasive Species Initiative

Globalization has lowered trade barriers over much of the world. It also has contributed to the ease with which exotic organisms--or invasive species--enter U.S. habitats and environments. Invading pest species not only create ecological and economical problems, they also threaten biodiversity and the financial stability of U.S. agriculture. **Once invaders become successful competitors in natural or agricultural ecosystems, producers must spend millions every year to combat them.** Collateral damage, such as loss of native diversity, may not be evident for years. **Moreover, exotic species represent a biosecurity risk through deliberate introduction into the United States.**

Beltsville laboratories are at the vanguard of invasive species research, covering prevention, detection, identification, and control. Invasive species research includes: insects, plants, fungi, nematodes, and other arthropods. Certain labs provide stand-by, 24-hour identification services for possible alien intruders. Others provide basic taxonomic information targeting preventive and control measures for use before or after invasive species have become established. Beltsville can point to many past successes in the battle against invasive species. Overall, Beltsville has the strongest invasive species programs in the nation. **The President's FY03 Budget proposes an increase of \$775,000 for Beltsville for Control of Invasive Species.** We strongly support this recommendation.

Tornado Damage and Recovery Needs

On September 24, 2001, BARC-West took a direct hit from a rare, 200 mph, Force-3 tornado. Unprecedented in Beltsville, **the powerful storm smashed windows and ripped roofing from buildings, damaged half of the Center's greenhouse space, destroyed 60 vehicles and damaged many others. It wreaked havoc on several laboratories, destroying equipment, reagents, and supplies--miraculously, no one was hurt.** The work of 75-100 scientists was set back by months, a few by years. Some irreplaceable environmental samples, plant clones, and the like were lost permanently. **Damage to facilities and vehicles and to equipment and supplies has been conservatively estimated at \$21.5 million.**

The BARC landscape took a big hit, too. Acres of trees and shrubs were lost, including a majestic 100 year-old American elm. BARC Director Phyllis Johnson has appointed a committee of leading horticulturists from BARC and the National Arboretum to develop and implement a comprehensive landscape restoration. We are pleased to report, Mr. Chairman, **that FAR-B is working closely with the landscape committee.** Thus far, we have raised over \$15,000 for clean-up, site preparation, and plant material purchases. Also, we have received or have commitments for thousands of dollars of donated or discounted plant materials. Despite the limited availability funds, repairs to the landscape are coming along well

Repairs to buildings, greenhouses, labs and lab restocking--not to mention vehicle replacements--pose a more formidable challenge. Still, by using thoughtful management, BARC is making excellent progress. For instance, using ARS Headquarters support, BARC has completed \$1.3 million of emergency roof repairs. Also, BARC has committed another \$3.8 million of Headquarters funds and \$407,000 from its R&M accounts to repairs.

Moreover, BARC is making excellent progress toward replacing its all-important greenhouses. BARC plans to use \$3 million of FY-02 Building and Facility funds to replace three greenhouses. The President's FY-03 budget proposes \$4.18 million for building and facilities, which BARC would use to replace four other greenhouses. Still other greenhouses will be replaced with hoop houses. Together, these measures and funding would generally complete tornado-related facility repairs, though they do not address vehicle and laboratory equipment and supplies replacement.

Lastly, we would emphasize our support for other BARC needs, including a poultry research facility (\$3 million) and phase III of the Human Nutrition Complex (\$22 million).

Mr. Chairman, that concludes our statement. We are grateful for your past support of the BARC mission. And, we again thank you for the opportunity to present our testimony.

Ralph A. Bram, Ph.D.
President, FAR--B

TESTIMONY
OF THE
FRIENDS OF AGRICULTURAL RESEARCH - BELLEVILLE
FOR THE
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
of the
Committee on Appropriations
U. S. House of Representatives

March 2000
HEARING FIRST December 2, 1999

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our written statement supporting the Administration's request for agricultural research funding. We are asking the Subcommittee to support funding for the Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the World- renowned Beltsville Agricultural Research Center (BARC), in Maryland.

The organization is the Friends of Agricultural Research - Beltsville (FAR-B), established in 1982. FAR-B is a private, non-profit, all-volunteer organization dedicated to assisting and promoting ARS's agricultural research and outreach. Our activities include: helping inform the world scientific community about BARC accomplishments and expertise; educating producers, industry, community, students, and the general public about science-based agriculture; helping organize and sponsor major symposia, public field days, and scientific seminars; generating private funds to help upgrade equipment and facilities; supporting high-interest exhibits and activities for the thousands of American and international visitors who visit the ARS National Visitors Center, located at BARC; and providing written testimony and other educational information to the U.S. Congress, public officials, and other interested parties in support of ARS's high-priority research and outreach.

Mr. Chairman, American agriculture has done an amazing job of securing food abundance not only for our country, but also around the world. As the 21st Century dawns, an American farm produced only enough food for its residents and a handful of others. Today, individual American farmers produce enough food for themselves and 200 others. A major part of that success is due to public research and outreach programs such as those of the Beltsville Agricultural Research Center.

In a recent informal summary, BARC director Dr. Thylis

Johnson discussed ways in which BARC research has rewarded agriculture and American consumers. We believe the Subcommittee will be impressed by a few highlights from that summary. Here is some of what Dr. Johnson has to say about returns that Americans—indeed the world—have reaped from BARC research.

Many economists, says Dr. Johnson, have measured the national impact of publicly supported agricultural research in economic terms. Highly regarded economists W.E. Huffman and R.E. Evenson estimate the annual return on agricultural research to be 135-170 percent. Virginia Tech's George W. Norton puts the long-term research return in a longer term perspective. He suggests that research knowledge may take several years to produce, then pay off for a long period of time... An analysis of long-term benefits found roughly a \$5 return, spread over a 15-to-20-year period, for each dollar invested in agricultural research.

These high returns translate into lower prices for consumers, growing international competitiveness for farmers, jobs for working families, and higher profits for agricultural businesses—in all, a tremendous return on publicly supported agricultural research.

Beltsville's accomplishments and ongoing programs make it a world leader. Its international reputation attracts thousands of visitors each year from the United States and abroad. The unparalleled National Agricultural Library—the world's premier repository of agricultural information—also is located on the Beltsville campus. Last October, Secretary Dan Glickman, Congressman Steny Hoyer, and other dignitaries assembled on the Beltsville campus to dedicate Beltsville's new, state-of-the-art office center to the great African-American agricultural scientist Dr. George Washington Carver. Most of the ARS national headquarters staff is housed at the Carver Center.

Mr. Chairman, returning for a moment to Dr. Johnson's informal summary, here are a few dramatic examples accomplishments drawn from 90 years of BARC research:

1910: BARC established with the beginning of dairy cattle research. Today, the **National Cooperative Herd Improvement Program** evaluates the genetic merit of dairy cattle worldwide; **recently, the program has reduced cost of milk to consumers by \$60 million per year.**

20s and 30s: Released first landscape roses, several still in the marketplace. Released the first pest-resistant potato varieties.

40s: Developed soilless plant growing media—including widely used vermiculite; discovered DEET—the principal ingredient in insect repellents that repels deer ticks, mosquitoes, chiggers and fleas. Today, DEET is the active ingredient in over 35 commercial repellents. From WWII through Operation Desert Storm and Somalia, DEET protected U.S. soldiers from malaria-bearing mosquitoes and other disease-carrying pests.

50s: Developed an artificial attractant for the Mediterranean fruit fly—used worldwide for monitoring; defined energy requirements for lactating dairy cows—leading to a practical feeding system recommended by the National Academy of Science to dairy farmers nationwide; saved the Great Lakes strawberry industry by releasing strawberry varieties resistant to red stele, a root-rotting fungus; pioneered research on plant responses to light quality and day length—culminating in the discovery of phytochrome, leading to major progress in understanding how plants biosynthesize complex carbohydrates.

60s: Did groundwork leading to methoprene—the most widely used household insecticide; contributed to the Green Revolution—a turning point in agriculture that drastically reduced world hunger; identified and supplied disease resistant wheat to plant breeding centers around the world; identified methionine as the precursor of ethylene—a plant hormone promoting fruit ripening, impacting agriculture and biology worldwide.

70s: Identified a chemical insect attractant for the gypsy moth—leading to traps for this forest-destroying pest; developed poinsettias for the commercial floral and nursery trade; developed chemicals to prolong fruit shelf-life and storage-life; released the potato variety Atlantic—still the number one potato chipping variety grown in the United States; discovered plant viroids—a class of plant-disease causing particles 80 times smaller than viruses; developed a practical test for the presence of viroids in potatoes. In the mid-1990s, this test saved the entire \$30 million Maine seed potato industry.

80s: Originated high quality, large-fruited blueberry varieties that sparked a new, profitable cultivated blueberry industry; discovered phytoplasmas—a previously unknown class of organisms that cause plant diseases; found that dietary selenium supplements enhance the effective treatment of malaria patients; developed near-infrared reflectance—a new technology that revolutionized international grain marketing systems. Supermarkets now use this technology to measure fat content in meats; first transgenic animals (pigs) born at Beltsville.

90s: With industry cooperation developed SoilGard (TM)—the first commercial biocontrol agent for soil-borne plant diseases; first demonstrated that nutritional status may influence the pathogenicity of a known human viral pathogen; first successful genetic transformation of sugar beets; released two tomato germplasm lines high in the phytonutrient lycopene (for high carotene content); developed remote sensing technology for measuring surface soil moisture, soil temperature, and other landscape characteristics; generated molecular probes to detect citrus canker disease—a disease that has extensively damaged the Florida citrus industry; released two new American elms resistant to Dutch Elm Disease.

Developed a technique for sorting sperm by X and Y sex chromosomes—a technique for pre-selecting the sex of farm animals. This technology also has been used in unique human reproduction in situations where parents may be carrying a sex-linked gene for genetic disease—more than 50 healthy infants have been born as of November 1999; developed and instituted timely, definitive procedures to identify Karnal bunt—a fungus disease that at times has impeded U.S. wheat exports, procedures allow the United States to export wheat as free of the Karnal bunt fungus; developed paper and other new products from chicken feathers—waste chicken feathers have a market value of only about tens cents a pound, but these new products fetch from fifty cents to over a dollar a pound.

REMAINING SPACE FOR FY2001 PRIORITIES AND THE FINAL PITCH.

**TESTIMONY
OF THE
FRIENDS OF AGRICULTURAL RESEARCH - BELTSVILLE, INC.
For the
Subcommittee on Agriculture, Rural Development, Food and
Drug Administration, and Related Agencies
of the
Committee on Appropriations
U. S. House of Representatives**

March 1998

Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to present this statement in support of funding for agricultural research. We are requesting your support for programs of the Agricultural Research Service (ARS) and its world renowned Beltsville Agricultural Research Center (BARC) in Maryland.

The Friends of Agricultural Research - Beltsville (FAR-B) is a private non-profit corporation dedicated to supporting and promoting agricultural research, especially the ARS research programs at Beltsville. FAR-B provides supplementary private funds for both research and education programs. The Friends co-sponsor symposia and conferences on topics of current scientific interest. Funds are provided to co-host important international scientists who visit Beltsville each year in order to discuss cooperative programs and exchange scientific information. This public/private partnership promotes excellence, helps to ensure that useful new BARC technology is put into practice, and is supportive of the mission of the Agency.

The agricultural enterprise with asset of over \$900 billion is one of the major sectors of the U.S. economy. Employment in the food and fiber sector generates 23 million jobs, representing about 18 percent of the civilian jobs in the U.S. economy. The demand for food and fiber products annually generates almost \$1 trillion in Gross Domestic Product, about 16 percent of the Nation's GDP. U.S. exports of agricultural products rose to \$60 billion in 1996. Of the 11 major U.S. industrial sectors, agriculture generated the largest **trade surplus** of \$27.5 billion in 1996.

The outstanding performance of the agricultural industry and the unprecedented gains in agricultural productivity over this century can be attributed in large measure to the dynamic research and development system in this Nation. Agricultural scientists and engineers have contributed a continuing stream of new knowledge, technological innovations, and new products to undergird the U.S. agricultural enterprise. Public investments in **agricultural research** have been critical to these gains. Economic studies show that such investments yield substantial returns on the order of 30 to 40 percent. These are sound investments.

Future support for agricultural research will be critical to the economic prosperity of our Nation and the well-being of society.

The Agricultural Research Service is the principal inhouse research agency of the U.S. Department of Agriculture. It has a lead role in solving high-priority problems of broad national significance. The Beltsville Agricultural Research Center is one of the major research facilities within ARS; it is among the largest and most diversified agricultural research complexes in the world.

Beltsville

The Beltsville Agricultural Research Center was established in Maryland in 1910. It has a long and distinguished history of outstanding contributions to scientific discovery. Although it is most popularly known for developing the Small White Beltsville turkey which graces consumers' tables each Thanksgiving, BARC's contributions are much more extensive and profound. Beltsville scientists identified and supplied plant breeding centers around the world with disease-resistant wheat that ultimately led to the Green Revolution. Genetic concepts that became the foundation for modern plant and animal breeding were developed at BARC. Beltsville discovered the photoreceptor that regulates the growth and development of plants. A BARC scientist discovered an entirely new class of viruslike pathogens - viroids - which opened new avenues to understanding and controlling diseases of plants, animals, and humans. The first naturally occurring beneficial fungus approved by the Environmental Protection Agency for the biocontrol of plant diseases was developed at Beltsville. Chemists and entomologists have pioneered the discovery and synthesis of a number of attractants (pheromones) essential for trapping and surveying insect populations for integrated pest management programs. Human nutrition scientists at Beltsville demonstrated that decreasing animal fat and increasing the proportion of fat from vegetable sources significantly reduces blood pressure, thus reducing the risk of cardiovascular disease.

Beltsville is a comprehensive research center with a wide variety of disciplines addressing diverse programs of great breath and scope. The ARS staff at Beltsville totals about 1500, including over 300 scientists. Programs are designed to systematically address the highest priority concerns of the Department, including food safety and human nutrition, natural resources and environmental quality, emerging diseases and exotic pests, genetic resources, climate change, integrated pest management, and sustainable farming systems. Research ranges from very basic experiments in plant and animal molecular genetics, physiology and chemistry to applied research in new instrumentation, germplasm databases and integrated systems.

The Beltsville complex is the repository for a number of unique national scientific assets. Among these are important research collections: the National Fungus Collection, the

National Parasite Collection, the USDA Nematode Collection, and other outstanding collections of insects, seeds, nitrogen-fixing bacteria, and plants. These collections are essential in identifying and assigning names to specimens and organisms, a crucial first step to reliable research and to effective control measures, especially for alien pests. The Beltsville Human Nutrition Center is home to the National Nutrient Data Bank, i.e., the database of the nutrient content of foods which is the foundation for food consumption tables throughout the world. The Center also has a staff responsible for the National Food Consumption Survey and the Continuing Survey of Food Intakes by Individuals, unique in understanding long-term dietary trends in the U.S. population. The world renowned National Agricultural Library is also located on the grounds of BARC.

Modernization of Facilities

A General Accounting Office Report a few years ago found widespread problems with aging Federal research facilities around the country. The findings indicated that a massive overhaul of these facilities, especially those built over 50 years ago, was needed.

Modernization of the facilities at Beltsville began in 1988. A systematic plan was developed to guide the modernization. USDA, the Office of Management and Budget, this Committee, and the Congress have been generous in providing annual support to upgrade and modernize BARC. House of Representatives Report No.99-211 included the following language:

"The Committee will expect to be kept fully advised as the Department works to restore and upgrade the Beltsville Agricultural Research Center." (p. 31)

Significant progress has been made in improving the facilities at Beltsville. Six major buildings have been modernized; a greenhouse complex has been renovated; a new dairy facility and composting research facility have been completed; and a new waste water treatment plant is now in operation. The infrastructure, including water lines and electrical service have been significantly upgraded.

The **highest priority** at Beltsville is funding to upgrade the facilities for the Beltsville Human Nutrition Research Center (BHNRC). **Human nutrition** research is a high priority within ARS and the Department. The link between diet and health is intriguing. Important breakthroughs have been made during this century. Many debilitating diseases such as pellagra, pernicious anemia, rickets, and scurvy have been eliminated as a result of research in human nutrition. The focus now has shifted from prevention of nutrient deficiencies to health maintenance and reduced risks of chronic illnesses, such as coronary heart disease, cancer, and diabetes.

The Beltsville Human Nutrition Research Center is the first of six such centers established in ARS. BHNRC programs focus on nutrient composition, nutritional quality, nutritional requirements, nutrient interactions, energy metabolism, and dietary strategies to delay the onset of nutrition-related chronic diseases. The National Food Consumption Survey also is an essential part of this program. For over 30 years, BHNRC scientists have had an uninterrupted input into the establishment of the Federal government's Recommended Daily Allowance (RDA) for dietary intake by the U.S. population. The broad indepth scientific knowledge base at Beltsville plays a vital role in the creation of these highly regarded guidelines for enhanced public health. The Beltsville staff has close associations with the National Institutes of Health, especially the National Heart, Lung, and Blood Institute, and the National Cancer Institute.

The ARS budget proposes a number of thrusts that would complement the BHNRC projects. Among these are proposals to upgrade the National Nutrient Data Bank that is so important to understanding the food choices necessary for a healthy diet. Also, support for research on nutrient-gene interactions, with special emphasis on the role of phytonutrients, is proposed.

The **human nutrition research facilities** at Beltsville are among the oldest in the Department and are, thus, in the greatest need of overhaul. This Committee provided funding for the planning and design of new BHNRC facilities. The design is underway; funding is needed to complete construction in a timely manner. Costs for the new facility in FY 1999 are estimated at **\$17 million** for construction.

The proposed budget includes funding in the amount of \$2.5 million, primarily for a new poultry production facility. The purpose of this facility is to brood and grow turkey toms and hens, and provide breeder space for different strains of turkeys with a view toward healthier and more efficient production of a commodity destined for human consumption. This proposal is consistent with the long-range plan for upgrading the Beltsville complex.

Other Current and Emerging Issues

A wide range of important issues confronts American agriculture and is of concern to the public. Two are of particular interest.

Pfisteria outbreaks in the Mid-Atlantic coastal tributaries and estuaries have become a major issue. Recent incidents in the Chesapeake Bay tributaries have focused public attention on the potential role of agricultural nutrients in the degradation of the waters. ARS scientists at Beltsville are working with colleagues at the Federal and State levels to develop management practices that farmers could adopt to reduce the movement of nutrients and pathogens to surface and ground water. A nitrogen soil test has been developed to help minimize excessive applications of nitrogen. New sustainable cropping

systems which reduce nutrient and pesticide leaching and surface loss by runoff are being evaluated. Improved methods for handling, composting, and disposing of manure from farms are being developed. And, remote sensing technology is being investigated as a cost-effective way of monitoring changes in the natural ecosystems over time and across large geographic areas. Approval of the FY 1999 budget proposals would allow a stronger research program in this critical area.

Food safety and quality are of paramount importance to the public. Despite the fact that the U.S. food supply is the safest in the world, thousands of Americans are stricken annually by illnesses caused by the food they consume. Consumers need to be assured of the safety of their food supply to prevent disruptions of normal healthy eating patterns. Beltsville scientists are widely involved in food safety research. New and improved analytical procedures for detecting antibiotic residues in meat and milk were developed at BARC. Industry, the Food and Drug Administration, and USDA's Food Safety and Inspection Service are now using these methods. BARC engineers are developing sensors and imaging technology for rapid inspection of poultry carcasses online during processing. Diagnostic tests and fundamental information on livestock parasites of human health significance are being researched, especially zoonotic diseases such as trichinosis, toxoplasmosis, and cryptosporidiosis. In recent years, increased attention is being given to the safety of fresh fruits and vegetables, which are so essential to a healthy diet. The Beltsville Symposium in Agricultural Research in May 1998 will bring together leading world experts to review the most recent advances in the science related to the safety and quality of fresh fruits and vegetables. The proposed budget would give a boost to this initiative.

Mr. Chairman, FAR-B thanks you and the Committee for your interest, leadership, and generous support of ARS and the Beltsville Agricultural Research Center. We recognize that finding funds for Federal agricultural research programs and facilities is a difficult challenge no matter how important the work is to the health, safety, prosperity, and well being of the Nation. This Committee has met that challenge over the years, and we encourage your continued efforts. We look forward to working with you in any way you may desire to serve the interests of American agriculture.

Obesity Prevention Research, \$1,750,000. Obesity is a growing health menace in the United States. Today, an estimated 64 percent of all Americans are overweight or obese. Obesity has been linked to heart disease, stroke and cancer, and also to spinal and joint problems and many other health problems. These funds would provide critical support for BARC and its collaborators to pursue vital clinical and experimental research on the influence of the dietary transition and to develop improved strategies for preventing further weight gain in the United States population. We urge support for this research.

Food Safety, \$725,000. Maintaining the safety and confidence in the safety of the U.S. food supply is a primary goal for producers and consuming consumers. Recent national food safety incidents highlight the need for research to identify points in the food chain where



FRIENDS OF AGRICULTURAL RESEARCH—BELTSVILLE (FAR—B)

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BELTSVILLE, MARYLAND 20705-1061

*Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace
Beltsville Agricultural Research Center, Beltsville, Maryland*

Testimony for the
Subcommittee on Agriculture, Rural Development and Related Agencies
Committee on Appropriations
United States Senate

March 23, 2007

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement regarding funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland.** Our organization—**Friends of Agricultural Research--Beltsville**—promotes the Center's current and long-term agricultural research, outreach, and educational missions.

Our testimony will emphasize two main themes: **First**, we begin by adding our strongest endorsement for **high-value "new" research items** proposed in the President's FY08 budget. We provide additional support for each new research item in Part I.

Second, we recommend and urge continuing full support for **on-going research** that the Congress has **previously mandated** to be carried out at BARC. Support for these items is **essential to sustaining irreplaceable research momentum now and fundamental to the success of American agriculture in the future.** We will elaborate on the basis for our recommendations in Part II.

Part I. New Research Items Proposed in the FY08 Budget

Obesity Prevention Research, \$1,150,000: Obesity is a growing health menace in the United States. Today, an estimated 64 percent of all Americans are overweight or obese. Obesity has been linked to heart disease, stroke and cancer, and thus to spiraling health problems and rapidly rising health care costs. These funds would provide critical support for BARC and its collaborators to pursue vital clinical and translational research on the efficacy of the Dietary Guidelines and to develop improved strategies for preventing unhealthy weight gain in the diverse American population. **We urge support for this research.**

Food Safety, \$708,000: Maintaining consumer confidence in the safety of the U. S food supply is a primary goal for producers and marketing managers. Recent isolated food safety incidents highlight the need for research to identify points in the food chain where

food can become contaminated by chemical residues, pathogenic bacteria or toxins that are capable of causing severe illness, even death in worst case situations. These funds provide the resources to examine production systems and pre-harvest crop management practices thoroughly, especially for leafy vegetables and organic produce. **We endorse full funding for this work.**

Research to Support the Animal and Plant Health Inspection Service, APHIS, Citrus Canker and Ralstonia, \$850,000: APHIS needs effective diagnostic tools to identify emerging citrus and tree fruits diseases, to confirm infections in epidemiological studies, and to carry out regulatory programs. This research also strengthens the National Citrus Pathogen Collection, which is essential for effective citrus disease research. Some of this research may be directed to Ralstonia, a bacterial pathogen not known to occur in the United States. Ralstonia causes wilt in potatoes, tomatoes, peppers, eggplant, and other crop plants. APHIS and ARS need to design survey protocols to detect and track plant disease agents and to identify crop pathogen threats. **Research on diseases of citrus, tree fruits, and other crops is extremely under funded. We strongly urge support for strengthening plant disease research and for supporting the action mission of the Animal and Plant Health Inspection Service.**

Emerging Diseases and Animal Health, \$1,165,000: Globalization of trade and the growing movement of people and goods around the world steadily raise the threat of disease outbreaks in the United States. Diseases such as avian influenza, bovine diarrhea, transmissible spongiform encephalopathies, and porcine reproductive and respiratory disease are among many such disease threats. Effective control strategies require a more complete understanding of not only the basic biology of pathogens and their mode of transmission but also of the animal's immune system for resisting infections. BARC has one of the country's premiere groups of scientists engaged in livestock immunology research. This funding would strengthen their research effort to more fully unravel the complexity of the animal's immune system and protect the health of U.S. livestock. This research is vital to advancing our understanding of livestock immunology, and for protecting and improving animal health. **We support full funding for these studies.**

Emerging Diseases of Livestock, \$195,000: This research is vital to further understanding genetics and genomics methods to improve disease resistance in livestock. **We recommend full funding.**

Emerging Diseases in Crops, \$500,000: We confirm and support the proposal to develop diagnostics for rapid, practical, and specific identification of pathogens. **This is an under funded research area, and we recommend full support.**

Soybean and Wheat Stem Rust, \$300, 000: This goal here is to identify and incorporate diverse sources of genetic resistance into new grain and soybean varieties and germplasm. **We fully support this research.**

Plant Introduction Stations and the National Plant Germplasm System, \$500,000:

These funds are necessary for making germplasm and associated information more readily available to research programs and user stakeholders. These funds are needed to support the activities of the Germplasm Resources Information Network, or GRIN, which provides germplasm information about plants, animals, microbes and invertebrates. **We recommend full funding.**

Specialty Crops Genetic Resources, \$250,000: These funds will provide floral and nursery plant research to support the research mission of the U.S. National Arboretum. **Full funding is recommended.**

Part II. Now we turn to the urgent **need to continue support for specific research areas that the Congress has mandated at BARC in previous fiscal years.** These mandates address research that has enormous national impact. We list them here with brief descriptions and our recommendations for continued funding.

Dairy genetics: For over 75 years, the Animal Improvement Programs Laboratory has created statistical genetic predictions to aid the dairy industry in identifying the best bulls for dairy breeding. Genetic improvement in dairy cattle has steadily increased milk yield per cow and feed efficiency (milk produced per pound of feed) over many years. The result is lower milk prices for consumers and less animal waste to contaminate the environment because fewer cows are needed to produce the nation's milk supply. **We confirm that this mission critical research should continue.**

Barley health food benefits: Barley contains soluble fiber compounds, called beta-glucans, that are beneficial for health. Beta-glucans can lower cholesterol and improve control of insulin and blood sugar. These funds support human-volunteer studies designed to help us better understand how barley could be used in a healthful diet to reduce the incidence of chronic disease. **We recommend continued support.**

Biomineral soil amendments for control of nematodes: Plant nematodes are microscopic worms that feed on the roots of plants. Nematodes can cause substantial losses in crop yields. This research focuses on using such industrial byproducts as environmentally benign soil additives for controlling nematodes. **We recommend funding for these promising approaches.**

Foundry Sand byproducts utilization: Waste sands from the metal-casting industry currently are dumped in landfills. This project is working with industry on guidelines for beneficial uses of these sands. **We recommend continuation.**

Poultry disease (avian coccidiosis): Coccidiosis, a parasitic poultry disease, costs the industry \$2-3 billion per year. This research focuses on understanding the genetics of both the parasite and the host chicken to identify targets that will allow better disease control. **We recommend this funding.**

Biomedical materials in plants: Plants can be used as factories to manufacture vaccines and other pharmaceuticals for both animals and humans. This research focuses on development of tobacco as a crop with this beneficial use. **This research should continue.**

National Germplasm Resources Program: Sources of germplasm for all agricultural crops are maintained either as seed or live plant material at several locations across the country. Much of this germplasm is the result of plant exploration around the world. This group maintains the computer database that indexes all crop germplasm in our repositories with critical information as to where it was obtained, the specific scientific identification, and information on useful traits for plant breeding. **We strongly support continued funding for this mission-critical program.**

Bovine genetics: This research focuses on bovine functional genomics, especially for dairy cattle. Scientists are identifying specific genes for quality traits such as easier calving, higher milk production, and resistance to mastitis. **We recommend this funding.**

Minor-use pesticides (IR-4): “Minor-use” pesticides are those that are used on crops such as fruits and vegetables that are not one of the “big four” crops like corn, wheat, and soybeans, and cotton. Because markets are much smaller than for major crops, chemical manufacturers have little incentive to obtain all the safety data needed to obtain EPA registration for pesticides used on minor crops. Nevertheless, producers of minor crops find certain agrochemicals to be essential. This project produces the data needed for EPA registration of minor-use pesticides. **We recommend continued funding.**

National Nutrition Monitoring System: Scientists at BARC have the unique responsibility of carrying out the national surveys of food consumption by individuals. This is now done in collaboration with HHS’s health surveys. BARC scientists also maintain the National Nutrient Database, which includes information on 126 nutrients in thousands of foods. This work supports the school lunch program, WIC, Food Stamps, senior nutrition programs, food labeling, dietetic practices, and even the EPA. **We urge continuation of this funding.**

Coffee and Cocoa: Producers of chocolate candy are the single largest users of fluid milk, sugar, peanuts, and almonds in the United States. U.S. specialty coffee shop chains also are one of the major markets for fluid milk. Events that limit the availability of cocoa or coffee can have significant impacts on major U.S. commodity markets. Candy producers need a stable supply of cocoa, but smallholders in developing countries produce most cocoa. Several devastating diseases and insects threaten cocoa. This research is aimed at developing environmentally friendly ways to control pests and diseases. Some insects that threaten coffee are very similar to those that attack cacao, thus work on the two crops benefits from being together. **We recommend continuation of this funding.**

literature available in print. Plans can be laid in advance to monitor various and other phenomena in the field and in the laboratory. This research should development of science in a way which is both useful and interesting.

National Geographic Research Program. Studies of the life of the animal kingdom and the life of the plant kingdom are carried out in the field and in the laboratory. The study of the life of the animal kingdom is carried out in the field and in the laboratory. The study of the life of the plant kingdom is carried out in the field and in the laboratory. The study of the life of the animal kingdom is carried out in the field and in the laboratory. The study of the life of the plant kingdom is carried out in the field and in the laboratory.

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Johne's disease: Johne's disease is a contagious bacterial disease of the intestinal tract of ruminants. It occurs most often in dairy cattle, causing weight loss and diarrhea. Nearly one-fourth of dairy herds are infected. Producers lose \$54 million annually from reduced milk production. The disease is spread in manure. This research focuses on disease control. **We recommend continuation of this funding**

Food safety—listeria, E.coli, and salmonella: Food-borne illness annually costs \$3 billion in health-care costs, and annually costs the economy up to \$40 billion in lost productivity. This research focuses on diagnostics for food-borne pathogens, and on ways to control pathogens in fruits and vegetables. **We recommend continuation of this funding**

Weed management research: All farmers must contend with weeds. For organic farmers, weeds are the single biggest challenge to crop production. This research, in collaboration with the Rodale Institute and Pennsylvania State University, focuses on developing systems for controlling weeds in organic production systems. Organic crop production was valued at \$400 million per year in the 2002 Census of Agriculture. **These research funds will improve non-chemical weed control.**

Mr. Chairman, that concludes our statement. We again thank you for the opportunity to present our testimony and for your generous support.

Sincerely,

K. Darwin Murrell, Ph.D.
President

John's disease. John's disease is a contagious bacterial disease of the intestinal tract in mammals. It occurs most often in dairy cattle, causing weight loss and diarrhea. It is caused by a bacterium called *Clostridium botulinum*. The disease is caused in humans. The research focuses on the development of a vaccine for this disease.

Food safety - history. Food and agricultural research focuses on the safety of food. It is a multidisciplinary field that involves food science, food engineering, and food microbiology. The research focuses on the development of new food products, the improvement of food processing techniques, and the development of new food packaging technologies.

Food management research. All farmers must contend with weeds. The organic farmer's goal is to control weeds without the use of synthetic herbicides. This research focuses on the development of new weed control techniques, the improvement of existing techniques, and the development of new weed control products. The research focuses on the development of new weed control products, the improvement of existing techniques, and the development of new weed control products.

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Summary

E. Garret (June 1993)
Food Safety

FRIENDS OF AGRICULTURAL RESEARCH—BELTSVILLE, INC.

P.O. Box 1061, Beltsville, Maryland 20704-1061

Testimony for the Subcommittee on Agriculture, Rural Development and Related Agencies Committee on Appropriations United States Senate

March 20, 2003

Mr. Chairman, and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's flagship research facility, the Henry A. Wallace Beltsville Agricultural Research Center (BARC), in Maryland. Our organization—**Friends of Agricultural Research--Beltsville**—is dedicated to supporting and promoting the Center's agricultural research, outreach, and educational mission.

In keeping with the seriousness of the times, our testimony this year will address only two major themes. The first lays out a vision for a **Center for Systematics**—a vision for a partnership of excellence based in Beltsville **in cooperation with the Smithsonian Institution's National Museum of Natural History and the University of Maryland.**

Our second theme addresses the urgent need to **continue support for specific research areas mandated by the Congress in Fiscal Years 01, 02, or 03.** These so-called add-ons attend to critical research needs that were recognized by this Subcommittee and others. We will list them with brief descriptions below.

I. Center for Systematics (The Oxford English Dictionary defines Systematics as the branch of biology that deals with interrelationships of different species and their classification; systematic zoology, botany, etc.; taxonomy.)

Please consider for a moment **these hypothetical scenarios** from the draft report of a select committee assembled last November to evaluate the state and future of systematics at Beltsville.

A pest is discovered in Iowa for the first time, devastating the corn and soybean crops. What is it? Where did it come from? How can it be eliminated?

Bioterrorists are planning to introduce new pests that will destroy vegetable and fruit production in the U.S. What organisms are most likely to be used? What strategies can be implemented to combat them? How can action agencies detect these organisms when they cross U.S. borders?

An invasive species of weed new to science is found to be widespread in Florida; its impact is so severe that five endangered species have become extinct and 30 other once-widespread species are now on the endangered list and their future is bleak. What is the plant species? Who will give it a name and more importantly who will know about other related species? Where does it come from? Are there organisms that feed on this weed in its native land that could be used to reduce its impact in Florida?

FRIENDS OF AGRICULTURAL RESEARCH--BELTSVILLE, INC.
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Testimony for the
Subcommittee on Agriculture, Rural Development and Related Agencies
Committee on Appropriations
United States Senate

March 20, 2003

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for the Agency's leadership in the Henry A. Wallace Beltsville Agricultural Research Center (BARC) in Maryland. Our organization--Friends of Agricultural Research--Beltsville--is dedicated to supporting and promoting the Center's agricultural research, outreach, and educational mission.

In keeping with the enthusiasm of the entire agricultural community, our testimony this year will address only two major themes. The first lays out a vision for a Center for Systematics--a vision for a partnership of excellence based in research in cooperation with the Smithsonian Institution's National Museum of Natural History and the University of Maryland.

Our second theme addresses the urgent need to continue support for scientific research studies mandated by the Congress in Fiscal years 01, 02, and 03. These so-called studies, which are critical research needs that were recognized by this Subcommittee and others. We will list them with brief descriptions below.

I. Center for Systematics (The Oxford English Dictionary defines Systematics as the branch of biology that deals with relationships of different species and their classification; systematic zoology; botany; etc.; taxonomy.)

Please consider for a moment these hypothetical scenarios from the draft report of a select committee assembled last November to evaluate the state and future of systematics at Beltsville:

A pest is discovered in Iowa for the first time, devastating the corn and soybean crops. What is it? Where did it come from? How can it be eliminated?

Bioinsecticide are planning to introduce new pests that will destroy vegetable and fruit production in the U.S. What organisms are most likely to be used? What strategies can be implemented to control them? How can we detect these organisms when they cross U.S. borders?

An invasive species of weed now in Canada is to be introduced in Florida. Its impact is so severe that five endangered species have become extinct and 30 other ones are endangered. Who is now in the endangered zone and how is it to be saved? What is the best way to save them? Will give it a name and more information will know about other endangered species? When does it come from? Are there organisms that feed on this weed? Is its name and how it could be used to reduce its impact in Florida?

In each of these (hypothetical) cases, systematics provides the answers. But the field of systematics is in a serious crisis. Just at a time when these kinds of information and expertise are desperately needed, the community of systematists is diminishing at an alarming rate. Unless the trend can be reversed, the crisis in systematics will unfortunately mean a new crisis for the safety of US agriculture, farmers, and the environment.

The Executive Summary sums up the select committee's findings and recommendations in these words:

"The **Beltsville Systematics Summit** was convened in November of 2002, with participation of national and international experts, to devise a plan to avert the looming crisis in US agriculture. The plan is centered on the historically strong commitment of the Federal government to support systematics, and the concentration of 80% of that effort in the Beltsville Agricultural Research Center research programs. This report of the Systematics Summit states the case for urgent and immediate action to forestall the crisis. It provides a vision to assure that Beltsville Systematics programs are able to fulfill their Federal commitment to a strong systematics foundation for US agriculture and agricultural research in the future. The long-term vision is that

"Beltsville systematics programs will be a powerful force affecting the security and productivity of U.S. agriculture. As national and global leaders, BARC systematists will create programs strategically and synergistically integrating Research, Collections, Communications Technology, and Training."

If a strong and immediate commitment to that vision is made, the outcomes will assure that

- new knowledge on all agriculturally important organisms, both beneficial and detrimental, accumulates rapidly and is made quickly available for practical use;
- collections are safely maintained, in perpetuity, in modern and upgraded facilities;
- collections-based information flows unimpeded between university, federal, and nongovernmental partners through constantly evolving communication systems; and
- a strong cadre of systematists to support Beltsville and collaborators' programs exists as a result of long-term strategic partnerships with other institutions to anticipate and fulfill critical training needs.

The culmination of the long-term vision is the development of a **Center for Systematics** of unparalleled excellence, nationally and internationally, that provides a cohesive and responsive base to US and global agriculture needs.

Lack of a strong commitment, or inability to provide adequate funding, will mean that the United States leaves its borders and its agricultural communities vulnerable to invasive species, emerging diseases and intentional destructive actions using agricultural biological agents. It will forego the opportunity to gain knowledge of organisms that can sustain US agriculture before it is too late. Tomorrow's needs cannot continue to be met with current resources. Demands on BARC systematics programs can only be met through significant increases in funding to prepare for the future. A well-designed plan to assure that is needed.

This report of the Beltsville Systematics Summit lays the groundwork and provides a framework for that plan to be developed in collaboration with a consortium of partners critical to its success. BARC systematics programs provide the front line of defense to both protect and expand US agriculture. Only by adequate funding to support the vision can the US be secure in providing a safe and adequate food supply for its citizens and a healthy and sustainable agricultural enterprise for its producers."

in each of these three categories, specialists provide the answers. The role of systems is to provide a framework for the integration and synthesis of information and expertise and to ensure that the complexity of systems is being managed at an appropriate level. The role of systems is to ensure that the complexity of systems is being managed at an appropriate level. The role of systems is to ensure that the complexity of systems is being managed at an appropriate level.

The Executive Summary sums up the select committee's findings and recommendations in these words:

The Bellville Systemic Summit was convened in November of 1995 with participation of national and international experts to design a plan to ensure the continued role of US agriculture. The plan is centered on the national strong commitment as the Federal Government to support a strategic and the continued role of US agriculture. The report of the Systemic Summit states that the case for action is to forestall the crisis. It provides a vision to ensure that Bellville Systemic Summit's role is to help the Federal Government to a strong systems foundation for US agriculture and agricultural research in the future. The long-term vision is that

"Bellville systemic programs will be a powerful force affecting the security and productivity of U.S. agriculture. As national and global leaders, BARS systems will create programs, shared goals and systematically integrating Research, Collection, Communication, Technology, and Training."

It is a strong and immediate commitment to that vision is made, the outcomes will ensure that:

- new knowledge on all economically important systems, both federal and international, is accumulated rapidly and is made publicly available for practical use;
- collections are rapidly made, stored, and made available in a secure and integrated fashion;
- collection-based information flows integrated between university, federal, and non-governmental partners into the community evolving communication systems; and
- a strong sense of joint mission to support Bellville and collection programs exists as a result of long-term, strategic partnerships with other institutions in agriculture and with critical training needs.

The culmination of the long-term vision is the development of a Center for Systemic of international research, nationally and internationally that provides a cohesive and responsive base to US and global agriculture.

Lack of a strong commitment or inability to provide adequate funding will mean that the United States leaves its partners and the agricultural communities vulnerable to future threats. Emerging diseases and the global destructive actions using agricultural biological agents. It will through the opportunity to gain knowledge of systems that can sustain US agriculture before it is too late. The program's needs cannot continue to be met with current resources. Demand on BARS systemic programs can only be met through significant increases in funding to ensure for the future. A well designed plan to ensure that is needed.

The report of the Bellville Systemic Summit says the groundwork and provides a framework for that plan to be developed in collaboration with a consortium of partners critical to the success of BARS systemic programs. The plan is to ensure that the US is secure in providing a sustainable, safe and adequate food supply for its citizens and a healthy and sustainable agricultural enterprise for the future.

II. Congressionally Mandated Programs at BARC

Animal Improvement Programs Laboratory

This venerable Beltsville laboratory and its predecessors have contributed over a century of steady genetic progress to America's milk production industry. Its reach is worldwide, helping producers everywhere make better informed genetic decisions and promoting export of American germplasm and breeding stock.

For many years America's dairy cows have steadily increased milk production at the rate of about 45 gallons per year. Approximately two-thirds of those increases can be traced to genetic progress. Much of the credit for that success stems from the cooperative national and international genetic evaluation programs of BARC's award winning **Animal Improvement Programs Laboratory**. The future of dairy industry will be greatly influenced by the research of the Animal Improvement Programs Laboratory. In recent years, the Laboratory staff has decreased as inflation and salary increases have eaten away at operating funds. We recommend continued funding support for the Laboratory.

Barley Health Foods Research

Barley contains carbohydrates called beta-glucans that help control blood sugar and cholesterol. **We recommend continued support for research to determine if barley-containing foods may affect the risks of such chronic conditions as cardiovascular disease, diabetes, and obesity.** This research is needed to assess the bioavailability and efficacy of food components found in barley and to identify foods, health practices, and attitudes associated with successful maintenance of weight loss.

Biomineral Soil Amendments for Nematode Control.

Losses to soil nematodes cost farmers billions every year. The soybean cyst nematode alone can cut soybean yields by 10 percent, often more. Citrus and vegetable crops also are vulnerable to intensive nematode damage. Growers are squeezed by expanding nematode infestations, nematicide resistance, and de-registration of traditional nematicides because of environmental concerns. **BARC in cooperation with industry and others is pursuing new, more effective approaches to nematode control. Promising research lines include using such re-cyclable soil amendment as animal wastes, composts, and mineral by-products.** We recommend continuing the increased funding for these promising approaches.

Foundry Sand By-Products Utilization

Municipalities and industries generate vast quantities of by-products. **By-products, such as foundry sand from the metal castings industry, have potential uses in agricultural and horticultural production processes.** The Animal Manure and By-Products Laboratory will use the funding to identify beneficial new uses and assess risks to human health, safety, or the environment from using foundry sand in agriculture. A new soil scientist will be hired to support this work. We recommend continuation of this funding.

Poultry Diseases

The mission of the **Parasite Biology, Epidemiology, and Systematics Laboratory** is to reduce the economic costs of parasites in livestock and poultry. **Coccidiosis causes the greatest economic loss to the meat chicken industry from disease.** But traditional chemical controls are becoming ineffective; and new non-chemical control methods are needed. New funding will be used to conduct functional genomics and proteomics analysis of coccidia to identify potential proteins that can be used in diagnostic tests and as targets for potential vaccine development. We recommend continuation of this funding.

Biomedical Plant Materials

There is a growing need for functionally active, protective molecules for human and animal pathogens. We need them at lower cost and without risk to humans, animals, or the environment. Such molecules include recombinant antibodies, vaccines, and enzymes. Also, we need non-contaminated, lower-cost, more reliable diagnostic reagents.

In recent years, scientists have produced biomedical reagents from plants in the laboratory. The potential benefits are huge. **For one example, replacing poultry vaccine injections with edible plant-produced vaccines would substantially lower poultry production costs.** Beltsville is uniquely equipped to develop necessary systems and to test their efficacy in cooperation with other ARS facilities working on livestock and poultry diseases. This is a cooperative project with the Biotechnology Foundation, Inc., in Philadelphia. We recommend continuation of this funding.

National Germplasm Resources System

This laboratory supports the national database that provides data storage and retrieval systems for collecting and disseminating germplasm information. It provides accurate taxonomy, transport, geographic, evaluation, inventory, and cooperator information for plant and animal germplasm holdings nationwide. **This is an ARS mission-critical activity.** We recommend continuation of funding.

Bovine Genetics

Somatic cell nuclear transfer (cloning) technology has tremendous biomedical and agricultural potential. Yet the frequency of successful births from cloning has been relatively low. Many pregnancies fail before completing gestation. **New funding will support collaborative research by the Gene Evaluation and Mapping Laboratory and the University of Illinois aimed at improving cloning efficiency.** A new Molecular Biologist is being hired to support this effort. We recommend continuation of this funding.

IR-4: Registration of Minor Use Pesticides

"Minor crops" have great economic value, but are not among the top ten crops like corn and soybeans that provide huge markets for pesticide manufacturers. **Manufacturers often do not see a large enough market to justify the expense of doing the research needed to register a pesticide for a "minor crop."** Without the IR-4 program, growers would have fewer options for pest control. The Beltsville **Environmental Quality Laboratory** operates a minor crop pesticide residue laboratory. This lab vigorously enforces EPA-prescribed protocols for all experimental procedures, and prepares comprehensive final reports. New funds enhance the overall mission of the Agency's IR-4 program. We recommend that this funding be continued.

Invasive Species Initiative

Globalization has lowered trade barriers over much of the world. It also has contributed to the ease with which exotic organisms--or invasive species--enter U.S. habitats and environments. Invading pest species not only create ecological and economical problems, they also threaten biodiversity and the financial stability of U.S. agriculture. **Once invaders become successful competitors in natural or agricultural ecosystems, producers must spend millions every year to combat them.** Collateral damage, such as loss of native diversity, may not be evident for years. **Moreover, exotic species represent a biosecurity risk through deliberate introduction into the United States.**

Beltsville laboratories are at the vanguard of invasive species research, covering prevention, detection, identification, and control. **Invasive species research at BARC includes: insects and other arthropods, plants, pathogenic organisms, and parasitic diseases.** Certain labs provide stand-by, 24-hour identification services for possible alien intruders. Others provide basic taxonomic information targeting preventive and control measures for use before or after invasive species have become established. Beltsville can point to many past successes in the battle against invasive species. Overall, Beltsville has the strongest invasive species programs in the nation. We strongly support this recommendation.

Mr. Chairman, that concludes our statement. We are grateful for your past support of the BARC mission. **We urge support for the Center for Systematics** as it may come before the Subcommittee. We further recommend continuation of the **Congressionally mandated research** we have listed.

Mr. Chairman, for the past several years our organization has submitted similar supporting testimony to this Subcommittee. As we prepare this year's testimony in the face of anxious times, we are at once mindful of and profoundly grateful for the freedom to petition Congress on matters that strike us as fundamental to the security and future of America's agricultural bounty.

Lastly, we again thank you for the opportunity to present our testimony.

Sincerely,

William P. Wergin, Ph.D.
President

Belleville laboratories are at the forefront of invasive species research, covering everything from detection, eradication, and control. Invasive species research at BARC includes insects and other arthropods, plants, pathogenic organisms, and parasitic diseases. Certain tests are done stand-by, 24-hour identification services for possible alien insects. Other projects include research information regarding preventive and control measures and use of other invasive species have become established. Belleville can point to many past successes in the fight against invasive species. Overall, Belleville has the strongest invasive species program in the nation. We strongly support this recommendation.

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Mr. Chairman, for the past several years our organization has submitted similar suggestions for testimony in this Subcommittee. As we propose this year's testimony is the last of several years we are at once grateful and extremely grateful for the freedom to petition Congress on matters that strike us as fundamental to the security and future of America's agricultural policy.

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William P. Weigert, Ph.D.
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